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Edited by J. M. CHALMERS-HUNT, F.R.E.S.

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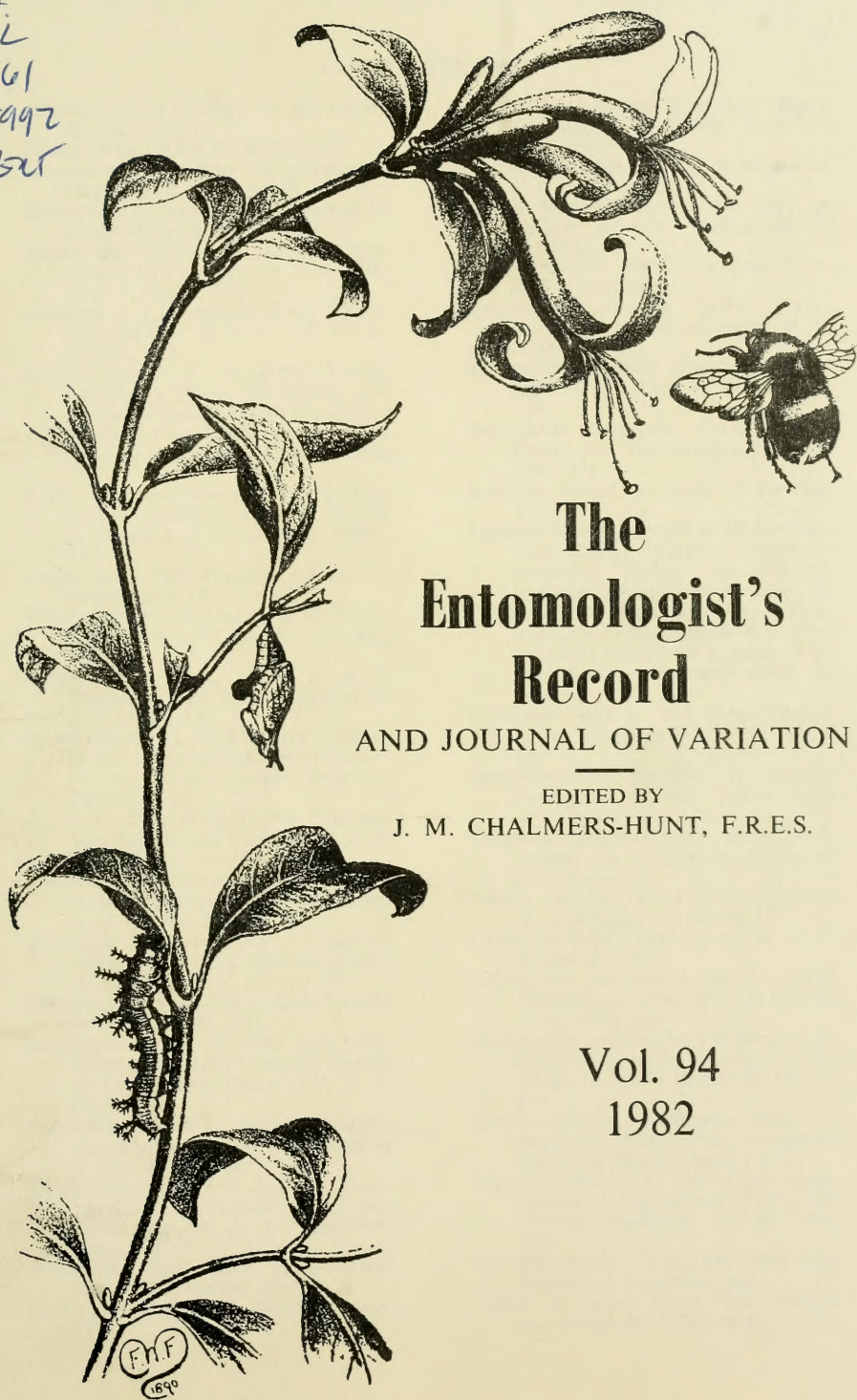
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CONTENTS 1982

- Adscita*, Colour Changes in the Genus *M. Hadley*, 201
- Adonis*? What Ails A. C. Morton, 67
- Agonopteryx astrantiae* Heinemann in Hampshire J. R. Langmaid, 182
- Agonopteryx astrantiae* (Heinemann) in North Wales. H. N. Michaelis, 37
- Agrion virgo* (Linn.) (Odonata; Agrionidae) in Central London. A Sighting of A. P. Foster, 246
- Alophora S. S. hemiptera* (Fab.) (Dipt.: Tachinidae) in V. C. 69. N. L. Birkett, 133
- Anarta myrtilli* L. Beautiful Yellow Underwing (Lep.: Noctuidae) and an Adult *Boreus hyemalis* (Neuropt.: Boreiidae) on Winter Snow in the Scottish Highlands A. D. Liston, 157
- Anthocharis cardamines* L. (Orange-Tip) in Dumfriesshire. Apparent Excess in Numbers of Female R. H. Miller, 162
- Anthocharis*. The Pupation of *D. G. Sevastopulo*, 17
- Aphantopus hyperantus* L. in Scotland. Flight Time of P. K. Kinnear, 236
- Apion cerdo* Gerst. (Col.) in S. E. England. The Recent Spread of A. A. Allen, 158
- Aporia crataegi* L. in Scotland. Further Notes on an introduced "Colony" of the Black Veined White R. Elliott, 245
- Argynnis adippe* D. & S. in S. Cumbria. The High Brown Fritillary M. J. Y. Foley, 238
- Argyresthia trifasciata* Staudinger 1871 (Lep.: Yponomeutidae) in Britain A. M. Emmet, 180
- Arhopalus rusticus* L. (Col.: Cerambycidae). A Second Monmouthshire Record of G. A. N. Horton, 24
- Autographa bractea* D. & S.: Gold Spangle in Kent J. Platts, 200
- Barcaldine, Argyll in 1980 and 1981. Some of the Less Common Species of Lepidoptera Taken at J. C. A. Craik, 243
- Barypeithes sulcifrons* (Bohman) (Col.: Curculionidae) from West Cumbria R. W. J. Read, 184
- Bisigna procerella* D. & S. (Lep.: Oecophoridae) in Britain. The Re-occurrence of J. M. Chalmers-Hunt, 204
- Bomolocha fontis* Thunb. The Beautiful Snout R. G. Warren, 44
- Book Talk Five J. M. Chalmers-Hunt, 121
- Brachyopa scutellaris* (Desvoidy) (Dipt.: Syrphidae) A Feeding Habit of N. L. Birkett, 206
- British Butterflies in 1981. A Review of C. J. Luckens, 125
- British Macrolepidoptera for 1981. A Review of the Indigenous P. Sokoloff, 185
- British Moth? What is a Truly C. I. Rutherford, 195
- Bucculatrix cidarella* Zeller (Lep.: Lyonetidae) on *Myrica gale*. H. N. Michaelis, 102
- Bucculatrix cidarella* Zeller on *Myrica gale* in England A. M. Emmet, 238
- Bucculatrix thoracella* Thunb. Confirmed for Vice County 11 E. H. Wild, 206
- Butterfly Poster. An Italian P. Hawker, 237
- Cacoecimorpha pronubana* Hbn. (Lep.: Tortricidae): Larval Foodplants including Damage to *Skimmia japonica* Thunb. B. K. West, 38
- Cacoecimorpha pronubana* Hbn. (Lep.: Tortricidae) Successfully Reared on Artificial Diet, with a Note on its Diapause Requirements B. O. C. Gardiner, 122
- Callophrys rubi* L. and *Pyrgus malvae* L. in Worcestershire J. E. Green, 163
- Camptogramma bilineata* L. Another Foodplant of the Yellow Shell R. P. Knill-Jones, 77
- Camptogramma bilineata* L. Yellow Shell, feeding on Cruciferae. Larvae of D. F. Owen, 52
- Canary Islands 1981. Two Weeks in the H. G. Allcard, A. Valletta, 111
- Canna in 1982. Lepidoptera at J. A. Campbell, 174
- Carpophilus marginellus* Motsch. (Col.: Nitidulinae) out-of-doors in Suffolk D. R. Nash, 228
- Carpophilus sexpustulatus* (Fabr.) (Col.: Nitidulidae) in Surrey, with a Note on its Habits in Britain D. Prance, 59
- Carterocephalus palaemon* Pallas in England 1976. The Chequered Skipper R. Archer-Lock, 123
- Catocala fraxini* L. and Other Lepidoptera at Highcliffe in 1982. The Clifden Nonpareil E. H. Wild, 204
- Catocala fraxini* L. in 1981. The Blue Underwing A. Harmer, 40
- Celerio livornica* Esper. The Striped Hawkmoth R. G. Chatelain 204

- Charaxes gallagheri* van Son 1961 (Lepidoptera: Nymphalidae), Its Habitats and Early Stages. A Consolidated History of the Discovery of J. C. O. Chitty, 147
- Chrysolina polita* (Linnaeus) (Col.: Chrysomelidae). On the Hostplant of R. W. J. Read, 199
- Clonopsis gallica* (Charpentier) on the Quiberon Peninsular, Brittany. Observations on the Phasmid E. C. M. Haes, 39
- Coccinellidae. Fluctuations in Abundance of D. F. Owen, 225
- Coleophora binderella* Kollar A New Foodplant N. F. Heal, 129
- Coleophora hemerobiella* (Scopoli). Two Year Life Cycle of A. M. Emmet, 239
- Coleophora machinella* Bradley: its Rediscovery in England, and Description J. R. Langmaid, 109
- Coleophora paripennella* Zeller — A New Foodplant N. F. Heal, 59
- Coleophora potentillae* Elisha (Lep.: Coleophoridae) — Some Observations J. R. Langmaid, 66
- Coleophora salicorniae* Wocke identified as *Salicornia fragilis* P. W. Ball and Tutin. Foodplant of N. F. Heal, 103
- Coleophora trigeminella* Fuchs and *C. coracipennella* Hbn. in South Yorkshire. H. E. Beaumont, 108
- Colias croceus* (Geoffroy) in June 1982. The Clouded Yellow T. Newnham, 162
- Conistra rubiginea* D. & S. (Lep.: Noctuidae). The Dotted Chestnut E. C. L. Simson, 45
- Convolvulus Hawkmoth and Clouded Yellow in South Devon H. L. O'Heffernan, 237
- Cornwall, with Observations on Other Notable Macrolepidoptera in the County. A New County Record for M. Hadley, 65
- Corrections. D. G. Sevastopulo, 69
- Curculio* Spp. (Col.). Notes on Some British A. A. Allen, 78
- Cynthia virginiensis* (Drury). Artificial Transportation of a Nymphalid, R. S. Wilkinson, 38
- D'Abrera's Butterflies of the Afro-Tropical Region. E. W. Classey, 15
- Danaus chrysippus* L. in Tunisia. J. F. Burton, 208
- Danaus plexippus* L. in the Algarve, Portugal 1981 C. I. Rutherford, 76
- Danaus plexippus* L.: The Monarch in Wales and Cumberland in 1981 D. W. Kydd, 37
- Death's Head Hawkmoth and Convolvulus Hawkmoth in Kent in 1981. The R. F. Buddle, 110
- Defoliation in Northern Great Wood, Hertfordshire. R. Lovell-Pank, 162
- Dermaptera from the Gunong Mulu National Park, Borneo. A Correction and an Addition A. Brindle, 101
- Descoloria blomeri* Curtis at Weston-super-Mare, Blomer's Rivulet C. S. H. Blathwayt, 154
- Dioryctria schuetzeella* Fuchs, 1899: A Pyralid Moth New to Britain J. M. Chalmers-Hunt, M. W. F. Tweedie, 1
- Dioryctria schuetzeella* Fuchs, in June 1982. M. W. F. Tweedie, 220
- Diptera (Calypttratae) of the Sandwell Valley, West Bromwich. The M. G. Bloxham, 60
- Diptera from Windsor Forest. Further Notable A. A. Allen, 229
- Dodona* sp. (Lepidoptera: Nemeobiidae) in Hong Kong. Some assistance with Regard to W. J. Tennent, 9
- Dorytomus salicinus* (Gyllenhal) (Col.: Curculionidae) from Cumbria. A Further Record of R. W. J. Read, 36
- Dytiscus* (Col.: Dytiscidae). A February E. C. Pelham-Clinton, 123
- Eastern Switzerland 1980, with a note on *Erebia pluto* de Prunn. Butterflies in C. J. Luckens, 173
- Editorial, 155
- Eggs Laid by a Decapitated Moth B. A. Kneller, 221
- Endromis versicolora* (L.) at Rannoch. The Kentish Glory, E. C. Pelham-Clinton, 215
- Entomological Pictures. A. H. Haworth's R. S. Wilkinson, 224
- Epermenia aequidentellus* Hofmann; *daucellus* Peyerimhoff (Lep.: Epermeniidae) in Kent J. M. Chalmers-Hunt, 202
- Epierus comptus* (Erichson) (Col.: Histeridae) New to Britain D. R. Nash, 165
- Erannis defoliaria* Clerck: Mottled Umber. An Early Appearance of J. N. Greatorex-Davies, 218
- Erynnis tages* L. ab. *radiata* Brown, A Correction R. D. G. Barrington, 103
- Erynnis tages* L. ab. *radiata* Brown in Dorset. The Dingy Skipper: R. G. D. Barrington, 69

SPECIAL INDEX

COMPILED BY M. R. BROWN (LEPIDOPTERA)

AND A. A. ALLEN (OTHER ORDERS)

For British Lepidoptera this Index follows the nomenclature of *A Check List of British Insects*, Part 2 by Kloet & Hincks (1972), brought up-to-date to correspond with the *Label List of British Butterflies & Moths* by Bradley & Fletcher (1979). Where a contributor has used a synonym, a cross reference is given. Any newly described taxa (species, genera, etc.) are distinguished by bold (Times) type, and taxa new to British or newly recognised as British by an asterisk. Moreover, with *Orders other than Lepidoptera*, (1) A bracketed asterisk denotes the reinstatement of a species long omitted from the British list, or the confirmation of one previously doubtful; (2) A formerly subspecific taxon raised to specific rank is treated as an addition to the fauna, but a correction of identity is not; and, finally (3) The "equals" sign indicates a *new* synonym, i.e. published for the first time; italics without this sign, recent synonymy that may be unfamiliar to many.

Vol. 94, 1982

	PAGE	PAGE
LEPIDOPTERA		
A		
abietella, <i>Dioryctria</i>	2	
absinthiata, <i>Eupithecia</i>	185	
acetosae, <i>Johanssonia</i>	98, 219	
acteon, <i>Thymelicus</i>	112, 125, 128, 240	
adippe, <i>Argynnis</i>	89, 126, 238, 240	
adusta, <i>Blepharita</i>	108	
advenella, <i>Eurhodope</i>	130	
aegeria, <i>Pararge</i> 40, 125, 138, 174, 209, 210, 214,	238	
aequidentellus, <i>Epermenia</i>	202	
aerugula, <i>Nola</i>	47, 99, 203	
aethiops, <i>Erebia</i>	20, 75, 107, 214	
agathina, <i>Xestia</i>	243	
agestis, <i>Aricia</i>	127	
aglaja, <i>Argynnis</i>	126, 173, 174, 238, 240	
albimaculata, <i>Amauris</i>	163	
albiodactylus, <i>Pselinphorus</i>	114	
albipuncta, <i>Mythimna</i>	82, 87	
albipunctata, <i>Cyclophora</i>	185	
albovenosa, <i>Simyra</i>	99	
albula, <i>Meganola</i>	99, 203	
albulata, <i>Perizoma</i>	243	
alburnella, <i>Telediodes</i>	98	
alceae, <i>Carcharodus</i>	136, 137	
alcetas, <i>Evers</i>	137	
alchemillata, <i>Perizoma</i>	107, 130	
alchimiella, <i>Caloptilia</i>	119	
alni, <i>Acronicta</i>	96, 155	
alpium, <i>Moma</i>	66, 95	
alsines, <i>Hoplodrina</i>	130, 243	
alstroemeriana, <i>Agonopterix</i>	37	
amata, <i>Pyrausta</i>	114	
anachoreta, <i>Clostera</i>	186	
anatipennella, <i>Coleophora</i>	242	
anglicella, <i>Parornix</i>	53	
angustana, <i>Eupoecilia</i>	131	
annulatella, <i>Rhigognostis</i>	130	
anomala, <i>Stilbia</i>	65, 243	
anthyllidella, <i>Approaerema</i>	131	
antiopa, <i>Nymphalis</i>	81, 86, 136, 138, 241	
antiqua, <i>Orgyia</i>	25-27, 108	
apollo, <i>Parnassius</i>	18	
aprilella, <i>Metzneria</i>	97	
aprilina, <i>Dichonia</i>	124	
arcuella, <i>Olethreutes</i>	98	
argentula, <i>Coleophora</i>	98, 219	
argiolus, <i>Celastrina</i>	127, 137	
arion, <i>Maculinea</i>	57	
armigera, <i>Helicoverpa</i>	48, 82, 87, 239	
armoricanus, <i>Pyrgus</i>	20	
artaxerxes, <i>Aricia</i>	127, 182	
asella, <i>Heterogenea</i>	95	
asinalis, <i>Mecyna</i>	130	
astrantiae, <i>Agonopterix</i>	37, 98, 182	
atalanta, <i>Vanessa</i>	48, 79, 82, 124, 125, 138, 174, 203, 217, 240	
athalia, <i>Mellicta</i>	57, 126, 173	
atomaria, <i>Ematurga</i>	108	
atra, <i>Blastodacna</i>	98	
atrata, <i>Odezia</i>	131, 243	
atrella, <i>Eulamprotes</i>	130	
atropos, <i>Acherontia</i>	87, 110	
aubyni, <i>Charaxes</i>	147	
augur, <i>Graphiphora</i>	130, 243	
aurantiaria, <i>Agriopis</i>	108	
aurella, <i>Stigmella</i>	131	
aurinia, <i>Eurodryas</i>	75, 126, 135, 203, 240	
autumnaria, <i>Ennomos</i>	73	
autumnata, <i>Epirrita</i>	107	
B		
baja, <i>Xestia</i>	108, 234	
balcanica, <i>Colias</i>	18	
bankiana, <i>Deltote</i>	81, 87, 186, 200	
baton, <i>Philotes</i>	135, 138	
belia, <i>Anthocharis</i>	134, 135, 137	

bellargus, <i>Lysandra</i>	67-69, 127, 205, 224
benanderi, <i>Coleophora</i>	130, 131
bennetii, <i>Agdistis</i>	204
berbera, <i>Amphipyra</i>	185
berberata, <i>Pareulype</i>	58, 185
betulae, <i>Thecla</i>	75, 127
betularia, <i>Biston</i>	73, 108
bicuspis, <i>Furcula</i>	96
bidentata, <i>Odontopera</i>	107
bilineata, <i>Camptogramma</i>	52, 77, 186
binderella, <i>Coleophora</i>	129
bipunctalis, <i>Psara</i>	114
bipunctosa, <i>Agonopterix</i>	98, 102, 103
biren, <i>Papestra</i>	108
biriviata, <i>Xanthorhoe</i>	73
blanda, <i>Hoplodrina</i>	243
blandella, <i>Caryocolum</i>	131
blomeri, <i>Discoloxia</i>	154
boeticus, <i>Lampides</i>	111, 112, 113
bombycina, <i>Polia</i>	243
bractea, <i>Autographa</i>	108, 200, 203, 243
brassicae, <i>Pieris</i>	72, 115, 123, 128, 135, 137, 199, 211
brumata, <i>Operophtera</i>	107, 162
buana, <i>Vanessa</i>	218
bucephala, <i>Phalera</i>	108, 198

C

caesiata, <i>Entephria</i>	107, 243
caesiella, <i>Swammerdamia</i>	130
cailina, <i>Aleucanitis</i>	137, 138
c-album, <i>Polygonia</i>	125, 240
caliginosa, <i>Acosmetia</i>	58, 185
callidice, <i>Pontia</i>	174
camdeboo, <i>Pseudonympha</i>	41
cambrica, <i>Venusia</i>	243
camilla, <i>Ladoga</i>	125, 200, 203, 216, 240
canaria, <i>Papilio</i> = <i>Gonepteryx rhammi</i>	75
captiuncula, <i>Photodes</i>	182
cardajai, <i>Oegoconia</i>	97
cardamines, <i>Anthocharis</i>	17, 128, 134, 135, 137, 162, 202, 209
cardui, <i>Cynthia</i>	38, 48, 49-52, 82, 83, 125, 162, 174, 203, 217
carmelita, <i>Odontotia</i>	45, 155, 194, 243
castanea, <i>Xestia</i>	65, 108
celtis, <i>Libythea</i>	135, 138
centrago, <i>Atethmia</i>	243
cerasivorella, <i>Coleophora</i>	108
cespitis, <i>Tholera</i>	65
ceylanica, <i>Valeria</i>	17
cheiranthi, <i>Pieris</i>	112, 114, 115, 199
chi, Antitype	108, 243
chittyi, <i>Charaxes</i>	148
chloerata, <i>Chloroclystis</i>	99
chloridice, <i>Pontia</i>	18
chlorosata, <i>Petrophora</i>	107
choragella, <i>Morophaga</i>	98
chrysippus, <i>Danaus</i>	113, 208

chrysis, <i>Diachrysa</i>	108
chrysorrhoea, <i>Euproctis</i>	242
cidarella, <i>Bucculatrix</i>	98, 102-103, 238
cinctaria, <i>Cleora</i>	243
cinctella, <i>Syncopacma</i>	98, 132, 133
cinerea, <i>Hesperia</i>	20
cinerella, <i>Acompsia</i>	131
cingovskii, <i>Psuedochazara</i>	18, 19
cinxia, <i>Melitaea</i>	135
citrago, <i>Xanthia</i>	243
citrata, <i>Chloroclysta</i>	107
classensi, ssp. <i>Lepidochrysops jamesi</i>	32, 41
clavipalpis, <i>Caradrina</i>	119
cleobule, <i>Gonepteryx</i>	111, 112, 113, 114
cleopatra, <i>Gonepteryx</i>	82, 86, 134, 135, 137, 201
clerkella, <i>Lyonetia</i>	180
comes, <i>Noctua</i>	108
comma, <i>Hesperia</i>	20, 128, 235
confusa, <i>Hadena</i>	77, 243
confusalis, <i>Nola</i>	31, 186, 243
congressariella, <i>Northris</i>	40
consimilana, <i>Clepsis</i>	131
consersana, <i>Cnephasia</i>	130
convolvuli, <i>Agrius</i>	47, 48, 75, 81, 87, 110, 142, 204, 237, 239
coracipennella, <i>Coleophora</i>	108
coras, <i>Polites</i>	66-71
coridon, <i>Lysandra</i>	19, 67, 68, 127
costaestrigalis, <i>Schrankia</i>	186, 243
cramera, <i>Aricia</i>	112, 114, 115
crassalis, <i>Hypena</i>	44, 186, 205
crataegi, <i>Aporia</i>	245-246
crataegi, <i>Trichiura</i>	243
crenata, <i>Apamea</i>	94
crinanensis, <i>Amphipoea</i>	108, 243
croceago, <i>Jodia</i>	95
croceus, <i>Colias</i>	48, 74, 82, 83, 111, 112, 113, 115, 137, 162, 204, 237
croesella, <i>Adela</i>	98, 219
cucullina, <i>Ptilodontella</i>	155
<i>cydippe</i> = <i>adippe</i> <i>Argynnis</i>	89

D

dahlui, <i>Diarsia</i>	77
damon, <i>Agrodiaetus</i>	19
daplidice, <i>Pontia</i>	112, 113, 168, 169, 170
<i>daucellus</i> = <i>Epermenia aequidentellus</i>	202
dealbana, <i>Gypsonoma</i>	130
decentella, <i>Etainia</i>	245
deceppitalis, <i>Udea</i>	121
defoliaria, <i>Erannis</i>	162, 218
deione, <i>Melicta</i>	135, 136, 138
delattini, <i>H.</i>	19
dentaria, <i>Selenia</i>	107
deodata, <i>Dodona</i>	9
derivalis, <i>Paracolax</i>	206

PAGE

PAGE

derivata, Anticlea	243
designata, Xanthorhoe	107
dia, Clossiana	135, 138
didymata, Perizoma	107, 243
discordella, Coleophora	131
dispar, Lymantria	87
divisella, Mompha	21
dubitella, Phyllonorycter	190
duplaris, Ochropacha	243

E

egeon, Dodona	9
egenaria Eupithecia	31
elinguaria, Crocallis	107
elongella, Monochroa	77
elpenor, Deilephila	174
epiphron, Erebia	6
epomidion, Apamea	108
eriphia, Antichloris	186
eros, Polyommatus	173, 174
erosaria, Deuteronomos	243
erxlebella, Roeslerstammia	31
eucharis, Colotis	17
eugenes, Dodona	9
euphorbiae, Acronicta	243
euphrosyne, Boloria	126, 209, 240
euryale, Erebia	19, 20
evonymella, Yponomeuta	241, 242
exanthemata, Cabera	108
exigua, Spodoptera	82, 87, 239
exsiccata, Tathorhynchus	81, 82, 87, 139
extimalis, Evergestis	77
exulis, Apamea	243

F

fagaria, Dyscia	243
fascelina, Dasychira	155
fasciaria, Hylaea	108
fasciuncula, Oligia	108
fatua, Neohipparchia	19
ferrugalis, Udea	49, 84
festaliella, Schreckensteini	131
festucae, Plusia	108
filicivora, Psychoides	130
filipendulae, Zygaena	131, 182
finitimella, Parornix	53-56
flammea, Panolis	150, 243
flammea, Senta	161
flavicinctata, Entephria	243
flavimetrella, Lampronia	98
flavofasciata, Perizoma	243
florella, Catopsilia	111, 112
fontis = Hypena crassalis	44
forsterana, Lozotaenia	38
fraxinata, Eupithecia	185
fraxini, Catocala	40, 74, 81, 87, 186, 204
fuciformis, Hemaris	95, 186
fuliginosa, Phragmatobia	108
fulvata, Cidaria	243

furcata, Hydriomena	107
furcula, Furcula	243
furuncula, Mesoligia	130
fuscanebulosa, Hepialus	107

G

galathea, Melanargia	125, 209, 214
gallagheri, Charaxes	147-150
gallicana, Cydia	130
gallii, Hyles	81, 87
gamma, Autographa	83, 108, 174, 204
gardetta, Coenonympha	173
genistae, Coleophora	219
geryon, Adscita	201
glandon, Agriades	174
glareosa, Paradiarsia	108
globulariae, Adscita	201
gnaphalii, Cucullia	95
gnoma, Pheosia	108
gnomana, Paramesia	98
goossensiata, Eupithecia	185
gorge, Erebia	174
gothica, Orthosia	108
gracilis, Orthosia	108
graeca, Boloria	19
graminis, Cerapteryx	108, 174
granella, Nemapogon	98
griseola, Eilema	130
grossulariata, Abraxas	174, 243
grotiana, Epagoge	130
guderiana, Charaxes	148

H

halterata, Lobophora	218
hastata, Rheumaptera	79, 107
haworthii, Celaena	108, 243
heegeriella, Phyllonorycter	120
helvola, Agrochola	243
hemerobiella, Coleophora	239
heracliana, Agonopterix	37
hippotoe, Palaeochrysopterus	173
hornigi, = Coleophora violacea	219
hornigi, Monochroa	77
hortella = Phyllonorycter saportella	
humuli, Hepialus	107, 156, 204
hyperantus, Aphantopus	125, 236

I

icarus, Polymmat	67, 127, 131, 138, 238
ilia, Apatura	19
imella, Monopis	98, 131
impluviata, Hydriomena	243
impura, Mythimna	108
incerta, Orthosia	45, 108
*indica, Vanessa	115, 217
innodata, Eupithecia	185
insignata, Eupithecia	99
inspersella, Scythris	97
intermedia, Euphydryas	173

interrogationis, Syngnatha	243
io, Inachis . . . 107, 124, 138, 209, 211	
ipsilon, Agrotis 83, 84, 203, 204	
iris, Apatura . . . 58, 125, 126, 155, 203, 209	
irrorella, Setina	243
ivella, Argyresthia	181

J

jacobaeae, Tyria	186
jamesi, Lepidochrysops 32, 41	
jubata, Alcis	243
juniperata, Thera	243
jurtina, Maniola . . . 40, 89-91, 112, 113, 115, 125, 164, 211, 214, 238	

K

knysna, Zizera	111, 112
--------------------------	----------

L

laccertinaria, Falcaria	243
lacteella, Mompha	116
laetus, Crombrugghia	114
lanceolana, Bactra	131
lanestris, Eriogaster	95
lariciata, Eupithecia 106, 107	
larseniella, Syncopacma . . . 98, 132-133	
lassella, Coleophora	21
laterana, Acleris	152
lathonia, Argynnis 135, 138, 168, 169, 170, 224	
leautieri, Lithophane	186
lefebvrei, Erebia	174
levana, Araschnia	75
libanotica, Colias	18
lichenaria, Cleorodes	243
lichenea, Eumichtis	40
ligia, Erebia	89
lignea, Blastobasis	130
ligula, Conistra 188, 189	
ligulella = Syncopacma larseniella	132
ligustri, Sphinx	242
limbalis, Uresiphita	112
limosipennella, Coleophora	190
lineata, Hyles 187, 204	
lineata, Siona 58, 94, 95, 185	
lineola, Thymelicus	128
linosyridella, Coleophora	97
littoralis, Lobesia	130
liturata, Semiothisa . . . 106, 107, 243	
livornica = Hyles lineata	204
loreyi, Mythimna	203
loti = Leptidea sinapis	121
loti, Zygaena	131
lubricipeda, Spilosoma	108
lucella, Ypsolopha	98
lucens, Amphipoea 108, 243	
lucernea, Standfussiana . . . 233-235, 243	
lucina, Hamearis . . . 89, 126, 127, 155, 200, 209, 240	
lucipara, Euplexia	108

luctuata, Spargania	96
lunosa, Omphaloscelis	243
lunaria = Selenia lunularia	238
lunularia, Selenia 238, 243	
lunaris, Minucia	136
luteolata, Opistograptis	107
luteum, Spilosoma	243
lutulenta, Aporophyla	243

M

machaon, Papilio 56, 57, 58, 121, 136, 137, 169	
machinella, Coleophora 98, 109-110	
malinellus, Yponomeuta	242
malvae, Pyrgus 128, 137, 163	
manto, Erebia	173
marginaria, Agriopis	108
marginella, Dichomeris	130
marginepunctata, Scopula	99
margueritae, ssp. Poecilmitis palmus 41, 43	
marianne, Ixias	17
maritima, Bucculatrix	102
maritimella = Coleophora machinella	110
maritimus, Chilodes	205
maura, Mormo	186
megea, Lasiommata 138, 209-214	
mcgregori, Lepidochrysops	34
melampus, Erebia	173
mendica, Diaphora	221
mendica, Diarsia	108
menyanthisdis, Acronicta	243
mercuriana, Epinotia	131
messaniella, Phyllonorycter	131
methymna, Lepidochrysops	33
meticulosa, Philogophora 84, 108, 186, 203	
metzneriana, Eucosma	202
miata, Chloroclysta	107
micacea, Hydraecia	108
miniata, Mitochrista	186
minima, Photodes	108
minimana, Phalonidia 98, 220	
minimella, Nemophora	130
minimus, Cupido 127, 137	
monoglypha, Apamea 108, 185	
montana, Erebia	173
montanata, Xanthorhoe	107
multistrigaria, Colostygia	107
mundana, Nudaria	108
munitata, Xanthorhoe 107, 243	
mutatella, Dioryctria	1
myrtilli, Anarta 65, 157-158	

N

nanata, Eupithecia	107
napaea, Boloria	173, 174
napi, Pieris 107, 111, 137, 174, 194, 211	
nervosa, Agonopterix	131
ni, Trichoplusia 82, 87, 204, 239	

PAGE

nicias, Aricia	173
nigra, Aporophyla	108, 186
nigrescentella, Phyllonorycter	130
nigricans, Poecilmitis	41, 42, 43
nigricella, Coleophora	108
niobe, Fabriciana	173
nobilis, Papilio	164
noctuella, Nomophila	84, 174, 244
nodicolella, Mompha	21-24
notata, Semiothisa	100, 243

O

obeliscata, Thera	106, 107
obfuscatus, Gnophos	243
obsoleta, Mythimna	161
obstipata, Orthonama	47, 48, 82, 87, 239, 244
occulta, Eurois	82, 87, 202, 239, 243
ocellata, Cosmorhoe	107
ocellea, Euchromius	81, 86, 98, 139
oculea, Amphipoea	108, 243
oeme, Erebia	20
oleracea, Laconobia	243
olivata, Colostygia	243
oliviella, Esperia	98
onopordi, Pyrgus	137
ophiogramma, Apamea	243
optilete, Vacciniina	174
oreas, Lepidochrysops	222, 223, 224
orichalcea, Diachrysia	81, 82, 87
otregiata, Lampropteryx	121
ottomanus, Heodes	201
ottomana, Erebia	19, 20

P

padella, Yponomeuta	242
palaemon, Carterocephalus	57, 90, 123, 128, 198
palaeno, Colias	168, 173, 198
pales, Boloria	173
pallens, Mythimna	130
pallescentella, Tinea	98
pallidana, Cochyliis	131
palmae, Gonepteryx	114, 115
palmus, Poecilmitis	41, 43, 44
pamphilus, Coenonympha	40, 107, 138
pandora, Pandoriana	113, 115
paphia, Argynnis	75, 126, 203, 240
paripennella, Coleophora	59
pavonia, Saturnia	107, 136
pectinataria, Colostygia	107
peltigera, Heliothis	47, 48, 82, 87, 203, 204
pendularia, Cyclophora	95
phicomone, Colias	173
phlaeas, Lycaena	112, 116, 137, 211
phoebus, Parnassius	173, 198
phoeniceata, Eupithecia	8, 65, 77, 186
phragmitidis, Arenostola	77, 161

PAGE

pilosaria, Apocheima	107, 162, 244
pimpinellata, Eupithecia	216
pinastri, Hyloicus	119, 150
pinaria, Bupalus	108, 150
pirithous, Syntarucus	235
pisi, Ceramica	108
plantaginis, Parasemia	108
plecta, Ochropleura	108
plexippus, Danaus	37, 48, 76, 81, 86, 111, 112, 141-146
pluto, Erebia	173, 174
podalirius, Iphiclides	135, 136, 137, 168-172
podana, Archips	131
polychloros, Nymphalis	48, 81, 86, 136, 138, 203
polycommata, Trichopteryx	45, 155, 243
polyxena, Zerynthia	134, 135, 137
populi, Laothoe	108
populi, Poecilocampa	107
porphyrea, Lycophotia	108
porrectella, Plutella	130
potatoria, Philudoria	185
potentillae, Coleophora	66
prasinana, Bena	99, 243
pringlei, Lepidochrysops	222-224
proboscidalis, Hypena	108
procerella, Bisigna	204
promissa, Catocala	94, 95, 204
pronoe, Erebia	173, 174
pronuba, Noctua	108, 185
pronubana, Cacoecimorpha	38, 122, 123
propinquella, Mompha	116
pruni, Strymonidia	127, 205
pseudospiretella, Hofmannophila	5, 119, 131
psi, Acrionicta	108
pudibunda, Dasychira	155
pulchella, Utetheisa	40, 47
pulchrina, Autographa	108
pulicariae, Digitivalva	131
pulveraria, Plagodis	243
punctosa, Choreutis	219
pupillaria, Cyclophora	204
purpuralis, Zygaena	131
puta, Agrotis	40
putris, Axylia	130
pygarga, Lithacodia	99
pygmaeola, Eilema	74, 203
pygmina, Photodes	108
pyraliata, Eulithis	107
pyramidea, Amphipyra	185
pyri, Saturnia	136

Q

quadra, Lithosia	65
quadrifasiata, Xanthorhoe	99
quadripuncta, Oegoconia	97
quercus, Lasiocampa	73, 107
quercus, Quercusia	8, 127
quinquella, Ectoedemia	119

R

rajella, Phyllonorycter	131
ramburialis, Diasemiopsis	47
rapae, Pieris	72, 111, 115, 137
ratzeburgiana, Zeiraphera	131
ravida, Spaelotis	85
recens, Orgyia	25-27, 74
rectilinea, Hyppa	108, 243
reducta, Limenitis	216
remissa, Apamea	108
repandata, Alcis	100, 108
retusa, Ipimorpha	65
rhomboidaria, Peribatodes	187
rhomboidea, Xestia	243
ribeata, Deileptenia	100
richardsoni, Meesia	98
ridens, Polyplocia	155
roborana, Epiblema	131
roboris, Phyllonorycter	244
robustella, Caloptilia	119, 120
rogenhoferi, Endotricha	114
ruberata, Hydriomena	107
rubi, Callophrys	135, 137, 163
rubi, Diarsia	108
rubi, Macrothylacia	107
rubiginata, Scopula	81, 86, 243
rubiginea, Conistra	45, 46, 188, 189
rubricosa, Cerastis	108
rufata, Chesias	206
rufescens, Brachmia	131
ruficornis, Drymonia	73
ruralis, Pleuroptya	75
russiae, Melanargia	19

S

sabinella, Gelechia	181
sacraria, Rhodometra	47, 48,
	81, 86, 142, 204
salicata, Coenoteophria	107, 243
salicorniae, Coleophora	103
samiatella, Stigmella	98
sannio, Diacrisia	108, 243
saportella, Phyllonorycter	119,
	120, 244
sappho, Neptis	19
sarcitrella, Endrosis	119
satura, Blepharita	76
satyrata, Eupithecia	107
saucia, Peridroma	83, 203, 204, 244
schoenicolella, Glyphipterix	102, 103
schuetzeella, Dioryctria	1, 97, 220
schulziana, Olethreutes	130
schumacherana, Olindia	37
scutulana, Epiblema	131
secalis, Mesapamea	108
secundaria, Peribatodes	187, 190, 218
selene, Boloria	107, 126,
	174, 238, 240
semele, Hipparchia	125, 174, 214
semiargus, Cyaniris	173
sericealis, Rivula	108

sericopeza, Etainia	245
serratella, Coleophora	129
sexalata, Pterapherapteryx	65
sexnotatus, Palpifer	156, 187
sexstrigata, Xestia	108
similella, Microthrix	98, 180
similis, Euproctis	75
simulans, Rhyacia	76, 85, 163,
	186, 200, 207, 237
sinapis, Leptidea	17, 103, 121,
	128, 137, 203, 209
smaragdaria, Thetidia	58, 185
solidaginis, Lithomoia	243
sororiata, Carsia	243
spartiella, Anarsia	131
spiniella, Paraswammerdamia	130
splendana, Cydia	131
stabilis, Orthosia	194
statilinus, Neohipparchia	19
staudingeri, Conistra	188-190
stellatarum, Macroglossum	49,
	84, 113, 200, 203, 239
stephensiana, Cnephasia	130
subbistrigella, Mompha	21
subfusca, Scoparia	130
subfuscata, Eupithecia	107
sublustris, Apamea	94
subpropinquella, Agonopterix	37, 130
suffumata, Lampropteryx	121,
	155, 243
suspecta, Parastichtis	243
sylvata, Abraxas	243
sylvaticella, Coleophora	98, 220

T

taeniatum, Perizoma	243
taeniolella, Syncopacma	132
tages, Erynnis	69, 103, 128
tamesis, Coleophora	98
templi, Dasypolia	182, 243
tenerana, Epinotia	131
ternata, Scopula	107, 243
testata, Eulithis	107
thoracella, Bucculatrix	206
thyellina, Orgyia	25-27
titania, Clossiana	173, 198
tithonus, Pyronia	89, 125, 214
tityrus, Heodes	137
tityus, Hemaris	95, 186
torquilella, Parornix	53-56
trabeatellus, Agriphila	114
tremula, Pheosia	243
tridens, Acronicta	243
trifasciata, Argyresthia	180-182
trifolii, Zygaena	75
trigemina, Abrostola	130
trigeminella, Coleophora	108
triplasia, Abrostola	108
tristata, Epirrhoe	107
tritici, Euxoa	243
trochilella, Coleophora	109, 110, 131
tullia, Coenonympha	107

PAGE

tunbergella, Micropterix	98, 219
turfosalis, Hyphenodes	243
tyndarus, Erebia	173
typhae, Nonagria	243
typica, Naenia	243

U

ulicetella, Agonopterix	131
uncula, Eustrotia	243
unionalis, Palpita	82, 86, 244
unipuncta, Mythimna	48, 82, 87
unitana, Aphelia	98, 220
urticae, Aglais	107, 125, 138,
	162, 172, 209, 210, 211
urticae, Spilosoma	107

V

varicella, Coleophora	161
velocella, Aroga	98
venata, Ochloides	211
versicolora, Endromis	88, 215
vetusta, Xylena	108, 243
v-flava, Oinophila	40
vibicigerella, Coleophora	98
viciae, Zygaena	58, 185
viminetella, Coleophora	102
vinula, Cerura	108, 243
violacea, Coleophora	66, 98, 219
viretata, Acasis	243
virgaureae, Heodes	168, 173
virginiensis, Cynthia	38, 81, 86
	141, 143
viridana, Tortrix	37, 162
viridaria, Phytometra	108, 206
vitellina, Mythimna	82, 87, 99,
	150, 203
vittata, Orthonama	243
vividis, Ceramides	75
vorticella = Syncopacma cinctella	132
vulcania, = Vanessa indica calliroe	217
vulpinaria, Idaea	186

W

w-album, Strymonidia	16-17
webbianus, Cyclyrius	111, 112,
	113, 115, 116
wilkella, Eulamprotes	98
wyssii, Pseudotergumia	115

X

xanthographa, Xestia	108, 182
xiphoides, Pieris	111, 113,
	115, 114, 115
xylostella, Plutella	49, 84

Z

ziczac, Eligmodonta	108
-------------------------------	-----

PAGE

zwartbergae, ssp. Poecilmitis	
nigricans	41, 42, 43

COLEOPTERA

Adalia bipunctata	225-8
decempunctata	225, 227
Ampedus, see Elater	
Anthonomus bituberculatus	36
Aphthona nonstriata	36
Apion cerdo	158-9
Arhopalus rusticus	24
Barypeithes sulcifrons	184
Calvia 14-guttata	225
Carcinops pumilio	165
Carpophilus marginellus	228
sempustulatus	59
Ceuthorrhynchidius troglodytes	35
Chilocorus renipustulatus	225
Chrysolina cerealis	58
fastuosa	124
polita	199-200
Cionus hortulanus, scrophulariae	124
Coccinella 7-punctata	225, 227-8
11-punctata	225
Creophilus maxillosus f. canariensis	116
Curculio betulae, pyrrhoceras,	
rubidus	78
glandium, venosus	78, 79
crux, nucum, villosus	79
Dirhagus pygmaeus	155
Dorytomus melanophthalmus,	
salicinus, taeniatus	36
Dytiscus marginalis	123
Elater cinnabarinus	155
*Epieris *compustus	165-7
antillarum, italicus, pulicarius	167
Epitrix atropae	155
Eubrychius velutus	161
Gnorimus variabilis	193
Gymnetron pascuorum	35
Hegeter (Heteger, <i>err.</i>) transversus	116
Hydroporus glabriusculus	175
Hypera dauci (<i>fasciculata</i>),	
plantaginis	161
fuscocinerea (<i>murina</i>), postica,	
punctata	35
nigrirostris	35, 161
Lagria (Lagia, <i>err.</i>) atripes	157
Litodactylus leucogaster	160-1
Magdalis duplicata, violacea	120-1
Mecinus pyraeter	35
Mordella aculeata	155
Otiorhynchus nodosus	184
Propylea 14-punctata	225
Saprosites mendax	155
Strangalia aurulenta	155
Thea 22-punctata	225
Tomoxia biguttata	155
Trachyploeus digitalis, scabriculus,	
spiniimanus	129
Tribalinae, Tribalini, Tribalus	166
T. minimus	166, 167

DERMAPTERA

Anisolabis (Annisolatus, <i>err.</i>)	
maxima	116
Chelisoches brevipennis	
(<i>binammatus</i>), morio	101
Nala ornata	101

DIPTERA

Achalcus melanotrichus	229
Acanthiptera rohrelliformis	28, 63
Alloeostylus diaphanus, simplex	28
sudeticus	28, 63
Allognota agromyzina	29
Allophorocera ferruginea	30
Alophora hemiptera	133
Amobia signata	31
Anasomyia lineata	230
Anthomyia imbrida	61
Azelia cilipes, macquarti, zetterstedti	28
Bellardia unxia (<i>Onesia biseta</i>)	60
Bibio lepidus, leucopterus, marci,	
varipes	192
pomonae	192, 193
Bicellaria intermedia, nigra	194
Brachicoma devia	31
Brachyopa bicolor, pilosa	230
insensilis	231
scutellaris	206, 230-1
Brachypalpus laphriformis	232
Caliprobola speciosa	232
Calliophrys riparia	29
Calliphora subalpina, vicina	60
Cheilosia scutellaris, soror	230
Chirosia albitarsis, flavipennis,	
parvicornis	61
Chrysogaster macquarti	230
Chrysopilus laetus	192
Cleigastra (<i>Cnemopogon</i>) apicalis	60
Coenosia intermedia, lineatipes,	
tigrina, tricolor	30
Coniosternum tinctiventris	175
Cordilura impudica, pudica	60
Craspedochaeta pullula	61
Criorhina asilica	232
Cynomya mortuorum	60
Dasyphora cyanella	28
Delia criniventris, lamelliseta	62
Dendrophonia querceti	28
Didea fasciata	229
Digonochaeta spinipennis	30
Dioctria baumhaueri	62
linearis	193
Dithryca guttularis	10
Ditricha, see Dithryca	
Dolichopus	229
Drapetis ephippiata	193-4
Drymeia hamata	28
Egle muscaria, spp.	62
Emmesomyia villica	62
Epistrophe diaphana	229
Erioptera griseipennis	60

Eriothrix ruomaculata	230
Ernestia consobrina, truncata	30
Eumerus ornatus	230
Eustalomyia festiva, histrio	61-2
Evibrissa vittata	156
Fannia aequilineata, hamata	63
canicularis, coracina, monilis,	
postica, scalaris, vesparia	62
Graphomya maculata	29
picta	29, 63
Gymnodia humilis	29
Hebecnema	62
affinis, nigricolor, umbratica,	
vespertina	29
Helina atripes, duplicata, impuncta,	
laetifica, lasiophthalma,	
obscurata, pertusa, quadrum,	
setiventris	29
Hercostomus assimilis, chalybeus,	
chrysozygos	229
Heterostylodes pratensis	62
Hilara obscura	194
Hybomitra bimaculata f. bisignata	192
Hydrophoria annulata, caudata	61
Hydrotaea armipes, bimaculata,	
dentipes, irritans, occulta, similis	28
parva	28, 63
Hylemya strenua	62
Lasiomma	61
Leucophora cinerea	31, 61
grisella	61
Leucopis *argenticollis, *geniculata,	
praecox	70
*orbiseta	71
Leucozona glauca, laternaria	229-30
Limnophora maculosa	29
Limonia tripunctata	60
Lispe tentaculata	29
Lispocephala alma, erythrocerata	29
Lophosceles cinereiventris	28
mutatus	28, 63
Lypha dubia	30
Machimus atricapillus	193
Macronychia unguans	31
Macrorchis meditata	29
Mallota cimbiciformis	230
Medetera ambigua, impigra	229
Medina luctuosa	30
Megaselia bovista, buxtoni, flava,	
flavicans, impolluta, lutea, nigra	104
fuscinervis	151-4
giraudii	221
pygmaeoides	105
Melangyna guttata	230
Melanomyia (<i>Morinia</i>)	62
Mesembrina meridiana	28
Metopia argyrocephala	31
Miltogramma punctatum	31
Morella aenescens, hortorum,	
simplex	28
Musca domestica, autumnalis	28
Muscina assimilis, pabulorum,	
stabulans	28

	PAGE
Mydaea	63
ancilla, electa, scutellaris, tincta, urbana	29
Myospila mediatubunda	29
Nanna (<i>Amaurosoma</i>) fasciata	60
Neoitamus cyanurus	193
Norellisoma spinimanum	60
Nupedia infirma	62
Ocytata pallipes	30
Ophyra leucostoma	28
Orellia falcata	10
Orthellia viridis	28
Orthoneura nobilis	230
Oxycera pulchella	192
Parasyrphus lineola	230
Paregle radicum	62
Parhelophilus frutetorum	230
Paykullia maculata	31
Pegohylemyia fugax	61
Pegomya nigratarsis	62
Pegomyza praepotens	62
Pelatachina tibialis	30
Phaonia basalis, errans	28
fuscata, goberti, halterata, incana, pallida, palpata, perdita, populi, rufipalpis, serva, signata, trimaculata, variegata, viarum	29
vittifera	29, 63
Phorbia securis, sepiæ	61
Phormia terraenovae	60
Phryxe nemea	30
vulgaris	202
Phyto discrepans	30-31
Platymya fimbriata	30
Platypalpus ciliaris	194
Polietes albolineatus, lardarius	28
Pollenia varia	60
Pseudonupedia intersecta	62
Pseudolimnophora triangula	29
Psilocephala melaleuca	193
Ptychoneura cylindrica	31
Rhamphomyia sulcatella	194
Rhinophora lepida	30-1
Sarcophaga carnaria, crassimargo, dissimilis, haemorrhoea	31
Scatophaga	60
Servillia ursina	30
Spilogona	62
denigrata, vana	29
Syrphus, see Epistrophe, Leucozona, Melangyna, Parasyrphus	
Tabanus bromius	193
Trichoptericoides decolor	28
Tropidia scita	162
Trypeta, see Orellia	
Verrallia beatricis, villosa	229
Wagneria gagatea	30
Xylota abiens, florum, lenta, nemorum, sylvarum, tarda, xanthocnema	231

HEMIPTERA

Aradus depressus	155
Pyrhhororis apterus	96

HYMENOPTERA

Allantus calceatus	176, 178
truncatus	178
Amauronematus fallax, fasciatus, histrio, tillbergi	178
Anthidium manicatum	114
Apis mellifera	115
Arachnospila wesmaeli	155
Bombus terrestris canariensis	114, 115
Cerceris cininna	114
Cimbex, C. femoratus	221
Crossocerus exiguus	155
Dolerus aeneus	117, 178
cothurnatus, niger,	178
Empria alector	178
pumila	177
Eutomostethus luteiventris	178
Euura mucronata	178
Lasioglossum brevicorne	155
Lygaeonematus, Lygaeophora, see Pristiphora	
Mesoneura, see Pachynematus	
Monophadnoides geniculata	178
Nematus bergmanni	178
monticola	175-6, 178
Osmia pilicornis	155
Pachynematus (<i>Mesoneura</i>) arcticus	117, 118
Paravespula germanica	115
Perineura rubi	176, 178
Phyllocolpa acutiserra, excavata	175, 178
coriacea	178
Podalonia tydei	114
Pontania bridgmanni, collectanea, viminalis	178
crassipes	117
Pristiphora (<i>Lygaeonematus</i> , <i>Lygaeophora</i>)	177
lanifica	176, 177
* micronematica (<i>leucostoma</i>)	175-7
pallidiventris, sp. nr. quercus	178
staudingeri	117
Sharliphora amphibola	178
Tenthredo moniliata, velox	178
Trichiosoma lucorum	178, 221
Vespula, see Paravespula	

MECOPTERA

Boreus hyemalis	158
---------------------------	-----

ODONATA

<i>Aeshna isosceles</i>	58
<i>Agriion virgo</i>	246
<i>Anax</i> sp.	114

ORTHOPTERA

<i>Aiolopus strepens, thalassinus</i> . . .	116
<i>Ariagona margaritae</i>	116
<i>Calliptamus plebeius</i>	116
<i>Chorthippus albomarginatus</i> . .	6, 12
<i>brunneus</i>	7, 12-13
<i>parallelus</i>	7, 13-14
<i>Decticus verrucivorus</i>	58
<i>Gomphocerippus rufus</i>	11, 12

<i>Gryllotalpa gryllotalpa</i>	6, 58
<i>Gryllus campestris</i>	58
<i>Meconema thalassinum</i>	8
<i>Melanoplus frigidus</i>	6
<i>Myrmeleotettix maculatus</i> . . .	7, 11
<i>Omocestus viridulus</i>	7, 11
<i>Platycleis</i> sp.	116
<i>Stenobothrus stigmaticus</i>	8
<i>Stethophyma grossum</i>	6
<i>Tetrix subulata</i>	6, 8, 14
<i>undulata</i>	7, 14
<i>Tettigonia viridissima</i>	7

PHASMIDA

<i>Clonopsis gallica</i>	39-40
------------------------------------	-------



- Etainia decentella* (Herrich-Schaffer 1855). (Lepidoptera Nepticulidae) A Possible Discovery of the First Generation Larva of *P. J. Johnson*, 245
- Euchromius ocella* (Haworth) (Lep.: Pyralidae) in Britain. The History of *B. Skinner*, 139
- Eucosma metzneriana* Treitschke in Hampshire *J. R. Langmaid*, 202
- Eulype hastata* L.: Argent and Sable, Feeding at Bluebells (*Endymion nonscriptus*) *B. K. West*, 79
- Euphydryas aurinia* Rott. and Other Local Butterflies in Durdley Woods, Surrey/Sussex Border in 1982. The Marsh Fritillary *M. S. Harvey*, 203
- Eupithecia phoeniceata* Rambur: Cypress Pug, in Essex. *C. C. Penney*, 8
- Eupithecia phoeniceata* Rambur in the Eastbourne Area. The Rise of the Cyprus Pug: *M. Parsons*, 77
- Eupithecia pimpinellata* Hbn. in Warwickshire. The Pimpinel Pug: *R. J. Thomas*, 216
- Euphydryas aurinea* Rott. in Cumbria. The Marsh Fritillary: *M. J. Y. Foley*, 240
- Eurois occulta* L.: Great Brocade, in Suffolk *C. Penney*, 202
- Exhibition. A Very Fine *P. C. Hawker*, 74
- Flying Crooked *J. S. Phillpotts*, 183
- Gonepteryx rhamni* L. Apparently Imbibing at Hydrangea Flowers. The Brimstone: *B. K. West*, 172
- Greece: July-August 1980. Butterflies in Northern *J. V. Dacie*, *M. K. V. Dacie*, *P. Grammaticos*, *J. Coutsis*, 18
- Hamearis lucina* L.: Duke of Burgundy. An Unusual Aberration of *R. D. Sutton*, 200
- Hamearis lucina* L. The Decline of the Duke of Burgundy *M. R. Oates*, 240
- Heodes ottomanus* Lefebvre and Cleopatra: *Gonepteryx Cleopatra* L. in Yugoslavia. The Grecian Copper: *J. E. Green*, *L. G. Higgins*, 201
- Hesperia comma* L. A New Locality near Eastbourne. The Silver-spotted Skipper: *M. Parsons*, 235
- Humming-bird Hawk Moth in London. The *T. Lumley*, 200
- Hypera fuscocinerea* Marsh. Etc. (Col.: Curculionidae) In S. E. London *A. A. Allen*, 35
- Hypera rumicis* (Linnaeus) (Col.: Curculionidae) Swimming Behaviour of *R. W. J. Read*, 160
- Immigration of Lepidoptera to the British Isles in 1980: A Supplementary Note. The *R. F. Bretherton*, *J. M. Chalmers-Hunt*, 47
- Immigration of Lepidoptera to the British Isles in 1981, including that of the Monarch Butterfly *Danaus plexippus* L. *R. F. Bretherton*, *J. M. Chalmers-Hunt*, 81
- Indigenous Macrolepidoptera of Abbot's Wood, East Sussex. The Decline of the *M. Hadley*, 92
- Iphiclidus podalirius* (L.) in Britain. The Scarce Swallow-tail, *R. S. Wilkinson*, 168
- John Abbot's Drawings and Notes for a Proposed Supplement to Smith and Abbot "The Natural History of the Rarer Lepidopterous Insects of Georgia" (1797) *R. S. Wilkinson*, 159
- Kirkcudbrightshire, South West Scotland. Macrolepidoptera of an Upland Area in *P. D. Hulme*, 106
- Lasionmatta megera* (L.) (Lepidoptera: Satyridae). Wait or Seek? Mate Location Strategies in the Wall Brown Butterfly, *R. L. H. Dennis*, 209
- Lepidoptera in Ireland. *D. J. Agassiz*, 130
- Leptidia sinapis* L. in South Devon. The Wood White *P. J. Baker*, 103
- Leucopis* Meigen (Diptera: Chamaemyiidae) New to Britain. Three Species of *I. F. G. McLean*, 70
- Letter to the Editor. *C. L. Nissen*, 88
- Limenitis reducta* Staudinger (Lep.: Nymphalidae) in Yorkshire. Survival of *R. J. D. Tilley*, 216
- Lincolnshire Butterflies. *M. Townsend*, 240
- Lobophora halterata* Hufn. Seraphim; (Lep.: Geometridae). Melanic Form of *B. K. West*, 218
- Logia atripes* Muls & Guil. (Col.) in the New Forest etc. *A. A. Allen*, 157
- Low Numbers of Lepidoptera in 1981. *J. H. Vine-Hall*, 182
- Lycaenid Butterflies from the South Western Cape Province. Three New *C. G. C. Dickson*, 222
- Magdalis violacea* L. (Col.: Curculionidae). Correction of a Record *A. A. Allen*, 120
- Margaret Fountaine: The Fate of Many of her Books and Some of her Notes. *J. M. Chalmers-Hunt*, 235
- Microlepidoptera: a Review of the Year 1981. *D. J. L. Agassiz*, 97
- Microlepidoptera Notes for 1981. Scottish *K. P. Bland*, 219

- Moma alpium* Osbeck at Orlestone Forest, The Scarce Merveille-du-Jour *M. Enfield*, 66
- Mompha lacteella* Stephens: a Possible Distinguishing Character. *R. J. Heckford*, 116
- Mompha nodicolella* Fuchs (Lep.: Momphidae). Notes on *A. M. Emmet*, 21
- Monochroa hornigi* (Staud.) Further Records of *D. J. L. Agassiz*, 77
- Mythimna loreyi* Duponchel and other Migrants in Cornwall, August 1982. The Cosmopolitan *N. Gill*, 203
- Mythimna vitellina* Hbn. in May. *M. W. F. Tweedie*, 150
- New Host Plant Records for *Cionus hortulanus* (Geoff.) (Col.: Curculionidae) and *Chrysolina fastuosa* (Scop.) (Col.: Chrysomelidae) *R. C. Welch*, 124
- Nineteenth Century Issues of Smith and Abbot, The Natural History of the Rarer Lepidopterous Insects of Georgia (1797) *R. S. Wilkinson*, 122
- Nola aerugula* Hbn.: Scarce Black Arches and *Autographa bractea* D. & S. Gold Spangle in Sheppey *F. H. Clouter*, 203
- Nola confusalis* H.-S. and *Roeslerstamia erxlebelli* F. on Lime. Larvae of the Least Arches; *J. L. Fenn*, 31
- Nymphalis antiopa* L. at Sea *J. G. Coutsis*, 241
- Nymphalis polychloros* L. in 1982. The Large Tortoiseshell *M. S. Harvey*, 203
- Observations on Lepidoptera in the Cevennes, Easter 1981. *J. S. E. Feltwell*, *G. N. Burton*, 134
- Odontosis carmelita* Esper Eat? What Does *R. Lovell-Pank*, 194
- Orange-Tip Oddities *C. F. Cowan*, 202
- Orgyia thyellina* Butler, *O. recens* Hubner and *O. antiqua* L. Contrasting Results in Assembling Experiments using *Sir C. Clarke*, *S. Greenberg* and *A. H. Wright*, 25
- Orthoptera in Highland Scotland. *E. C. M. Haes*, 6
- Pachynematus arcticus* (Lundqvist) (Hymenoptera, Tenthredinidae). Note on *A. D. Liston*, 117
- Pagham Harbour, West Sussex. Lepidoptera at *D. Dey*, 200
- Palpifer sexnotatus* Moore (Lep.: Hepialidae) in Britain. *P. J. Baker*, 156
- Panolis flammea* Hbn. Larval Variation in the Pine Beauty, *M. E. Majerus*, 150
- Papilio machaon* L. (Swallowtail) Flourishing in a N. Norfolk Locality 1981. *A. A. Allen*, 56
- Pararge aegeria* L. (Speckled Wood) feeding on Damaged Apple *B. K. West*, 238
- Parornix finitimella* (Zeller) and *P. torquillella* (Zeller) (Lepidoptera, Gracillariidae) *A. M. Emmet*, 53
- Peribatodes secundaria* D. & S. in Sussex. The Feathered Beauty: *R. G. Chatelain*, 218
- Peribatodes secundaria* D. & S. The Larva of *R. G. Chatelain*, 190
- Phalera bucephala* L. Feeding on *Sorbus* Species (Rosaceae) and Aspen. Larvae of the Buff-tip *B. K. West*, 198
- Phoridae (Diptera) from Cocoons of Cimbicidae (Hymenoptera. Further Records of *A. D. Liston*, 221
- Phoridae (Diptera) Reared from Fungi. Records of *R. H. L. Disney*, *R. E. Evans*, 104
- Phyllonorycter dubitella* (H.-S.) and *Coleophora limosipennella* (Dup. in South Yorkshire. *H. E. Beaumont*, 190
- Phyllonorycter saportella* (Duponchel) (*hortella* Fabricius) in East Norfolk. *A. M. Emmet*, 119
- Phyllonorycter saportella* (Duponchel) in East Anglia. Further Notes on *A. M. Emmet*, 244
- Pieris cheiranthi* Hbn. in Tenerife *R. I. V. Elliott*, 199
- Pieris napi* L. at Morton Lochs, Fife, Scotland in 1981. The Appearance of a Third Brood in the Green-Veined White: *P. K. Kinnear*, 194
- Plant Chemistry. Restricted Distributions of Butterflies and *D. F. Owen*, 205
- "Pock-mark" in Entomology. The Use of the Term *J. M. Chalmers-Hunt*, 59
- "Pock-mark" in Entomology. The Use of the Term *J. R. Langmaid*, 161
- Rae and his Records, and a Note on Mr. William Reid of Pitcaple. *Mr. J. M. R. Young*, 75
- Red Admiral. An Early *E. H. Wild*, 79
- Red Admiral on the Wing in December 1981. *S. C. S. Brown*, 124
- Rhyacia simulans* Hufnagel: Dotted Rustic in Lincolnshire. *M. Townsend*, 237
- Rhyacia simulans* Hufnagel. Further Kentish Records of the Dotted Rustic *N. F. Heal*, 163

- Rhyacia simulans* (Hufnagel) (Lep.: Noctuidae). Successful Rearing of the Dotted Rustic: *P. Convey*, 207
- Saltatoria of the Bristol Area and North Somerset. A Survey of the *J. F. Burton*, 11
- Samuel Dale's "1704" Catalogue of English Butterflies. *R. S. Wilkinson*, 36
- Sawflies from Whitelaw Moss Nature Reserve, Southern Scotland, with a Species New to Britain (Hym.: Symphyta). Some *A. D. Liston*, 175
- Scuttle Fly (Diptera, Phoridae) that Appears to be a Parasitoid of a Snail (Stylommatophora zoni- tidae) and Itself Parasitised by a Braconid (Hymenoptera) *R. H. L. Disney*, 151
- Selenia lunaria* D. & S. in East Sussex. The Lunar Thorn: *M. Parsons*, 238
- Senta flammea* (Curtis) (The Flame Wainscot) at Wye, Kent *M. A. Enfield*, 161
- South African Butterflies. Four New *C. G. C. Dickson*, 32, 41
- Sphinx ligustri* L. (Privet Hawkmoth) Disappearance from N. W. Kent *B. K. West*, 242
- Standfussiana lucerneae* (Linn.) (Lepido- ptera: Noctuidae) in Lancashire. The Northern Rustic *E. G. Hancock*, 233
- Strange Case of Larval Depravity. *A. M. Hadley*, 119
- Striped Hawkmoth in Devon in 1980. *J. C. A. Craik*, 187
- Strymonidia w-album* Knoch. The White- Letter Hairstreak: *A. Archer-Lock*, 16
- Syncopacma larseniella* (Gozmany), a Hitherto Underrecorded Species. *R. J. Heckford*, 132
- Syntomid in Cambridge. A South American *B. O. C. Gardiner*, 75
- Syntarucus pithous* L. A New Food- plant for *J. G. Coutsis*, 235
- Tephritidae (Dipt.) on a South East London Common. Two Interesting *A. A. Allen*, 10
- Trachyphloeus* spp. (Col.: Curculionidae). A Note on Two *A. A. Allen*, 129
- Treasurer's Notice. *P. J. Johnson*, 236
- Trichoplusia ni* Hbn. in Hampshire. The Ni Moth *J. R. Langmaid*, 204
- Trichoplusia ni* Hbn. in Warwickshire. The First Recording of *D. C. G. Brown*, 239
- Tropidia scita* (Harris) (Diptera: Syrphidae) in VC. 69 *N. L. Birkett*, 162
- "Types" of *Maniola jurtina splendida* White (Lep.: Satyridae). The *G. Thomson*, 89
- Udea decrepitalis* H.-S. (Lep.: Pyralidae) in Wales *P. J. Jewess*, 121
- Unusual Indigenous Macrolepidoptera at Ninfield East Sussex in July 1982. Some *M. Parsons*, 205
- Vanessa indica* (Herbst) in Warwickshire: New to Britain *K. Turner*, 217
- What's in a Name? *A. A. Allen*, 4
- What's in a Name? A Suggestion *A. J. Showler*, 124
- Wildlife and Country Act, 1981. The *A. E. Stubbs*, 57
- Windsor Forest. Further Notable Diptera From *A. A. Allen*, 191
- Wye, Kent in 1981. Interesting Moths at M. V. Light at or Near *M. Enfield*, 76
- Yorkshire. Additions to the Macrolepi- doptera of *S. M. Jackson*, 99
- Yponomeuta evonymella* (Linnaeus) in Southern England. *A. M. Emmet*, 241
- Zygaena loti scotica* Rowland Brown on Mull. *J. H. Vine-Hall*, 131
- Current Literature: 20, 27, 40, 80, 88, 100, 155, 163, 164, 196, 197, 247.
- Obituary:
 Collinson W. E. 73
 Dixon, C. H. 156
 Gane, J. V. 74
 Goodban, B. S. 73
 Largen, R. 247
 Sutton, G. R. 179
- Agassiz, D. J. L. 77, 97, 130
 Allcard, H. G. 111
 Allen, A. A. 4, 10, 35, 56, 78, 120, 129, 157, 158, 191, 229
 Archer-Lock, A. 16, 123
- Baker, P. J. 103, 156
 Birkett, N. L. 133, 162, 206
 Barrington, R. D. G. 69, 103
 Beaumont, H. E. 108, 190
 Bland, K. P. 219
 Blathwayt, C. S. H. 154
 Bloxham, M. G. 28, 60
 Bretherton, R. F. 47, 81, 141, 218
 Brindle, A. 101
 Brown, D. C. G. 239

- Brown, S. C. S. 124
 Buddle, R. F. 110
 Burton, G. N. 134
 Burton, J. F. 11, 208

 Campbell, J. A. 174
 Chalmers-Hunt, J. M. 1, 47, 59, 81,
 121, 141, 179, 202, 204, 335.
 Chatelain, R. G. 190, 204, 218
 Chitty, J. C. O. 147
 Clarke, Sir C. 25
 Classey, E. W. 15
 Clouter, F. H. 203
 Convey, P. 207
 Coutsis, J. G. 18, 235, 241
 Craik, J. C. A. 187, 243

 Dacie, J. V. 18
 Dacie, M. K. V. 18
 Dennis, R. L. H. 209
 Dey, D. 200
 Dickson, C. G. C. 32, 41, 222
 Disney, R. H. L. 104, 151

 Elliott, R. I. V. 199, 245
 Emmet, A. M. 21, 53, 119, 180, 238,
 239, 241, 244
 Enfield, M. 66, 76, 161
 Evans, R. E. 104

 Feltwell, J. S. E. 134
 Fenn, J. L. 31
 Foley, M. J. Y. 238, 240
 Foster, A. P. 246

 Gardiner, B. O. C. 75, 122
 Gill, N. 203
 Goater, B. 188
 Grammaticos, P. 18
 Greatorex-Davies, J. N. 218
 Green, J. E. 163, 201
 Greenberg, S. 25

 Hadley, M. 65, 92, 119, 201
 Haes, E. C. M. 6, 39
 Hancock, E. G. 233
 Harmer, A. 40
 Harvey, M. S. 203
 Hawker, P. C. 74, 237
 Heal, N. F. 59, 103, 129, 163
 Heckford, R. J. 116, 132
 Higgins, L. G. 201
 Horton, G. A. N. 24
 Hume, P. D. 106

 Jackson, S. M. 99
 Jewess, P. J. 121
 Johnson, P. J. 236, 245

 Kinnear, P. K. 194
 Kneller, B. A. 221, 236
 Knill-Jones, R. P. 77

 Kydd, D. W. 37

 Langmaid, J. R. 66, 109, 161, 182,
 202, 204
 Liston, A. D. 117, 157, 175, 221
 Lovell-Pank, R. 162, 194
 Luckens, C. J. 125, 173
 Lumley, T. 200

 Majerus, M. E. N. 150
 McLean, I. G. F. 70
 Michaelis, H. N. 37, 102
 Miller, R. H. 162
 Morton, A. C. 67

 Nash, D. R. 165, 228
 Newnham, T. 162
 Nissen, C. L. 88

 Oates, M. R. 240
 O'Heffernan, H. L. 237
 Owen, D. F. 52, 205, 225

 Parsons, M. 77, 205, 235, 238
 Pelham-Clinton, E. C. 123, 215
 Penney, C. C. 8, 202
 Phillpott, J. S. 183
 Platts, J. 200
 Prance, D. 59

 Read, R. W. J. 36, 160, 184, 199
 Rutherford, C. I. 76, 195

 Sevastopulo, D. G. 17, 69
 Showler, A. J. 124
 Simson, E. C. L. 45
 Skinner, B. 139
 Sokoloff, P. 88, 100, 185
 Stubbs, A. E. 57
 Sutton, R. D. 200

 Tennent, W. J. 9
 Thomas, R. J. 216
 Thomson, G. 89
 Tilley, R. J. D. 216
 Townsend, M. 237, 240
 Turner, K. 217
 Tweedie, M. W. F. 1, 150, 220

 Valletta, A. 111
 Vine-Hall, J. H. 131, 182

 Warren, R. G. 44
 Welch, R. C. 124
 West, B. K. 38, 79, 172, 198, 218,
 238, 242
 Wild, E. H. 79, 204, 206
 Wilkinson, R. S. 36, 38, 224
 Wright, A. H., 25

 Young, M. R. 75

PLATE II



By C. G. C. DICKSON, M.Sc.*

(Concluded from Volume 94, page 35)

A new race of Poecilmitis nigricans (Aurivillius).

The first example of this exquisite little butterfly was secured by William Burchell at Genadendal, in the Cape Colony, in 1815 (i.e., in one of its races); and the specimen is still preserved in the University Museum, Oxford. It was known to Trimen as a "variety" of *Poecilmitis* [*Zeritis*] *thysbe* (L.), but only from very few specimens. Aurivillius described it himself as a "variety" of *thysbe* in Seitz' *Macrolep. of World*, 13: 430 (1924), under the present name; the type-locality being the Muizenberg Mountains in the Cape Peninsula. The writer has realised since first capturing specimens of *nigricans* on the Fransch Hoek Mountains in November, 1945, that the males, at least, from there too, differed from the nominate insect, especially with regard to the wider black band in the hindwing upperside. This feature is very obvious also in males from the Klein and Groot Zwartbergen and examples from these localities have been used for the description given hereunder.

Poecilmitis nigricans zwartbergae subsp. nov.

Male.

The forewings tend to be somewhat less pointed than in nominate *P. nigricans*.

Upperside.

In comparison with nominate *nigricans* the black band of hindwing is normally much broadened; at its greatest width, its inner edge being 3.5–4.5 mm. from the wing-margin (the width varying somewhat in different specimens and at least in one male

*"Blencathra", Cambridge Avenue, St. Michael's Estate, Cape Town.

LEGEND TO PLATE II

Pseudonympha camdeboo spec. nov.: fig. 1. ♂ holotype (upperside); fig. 2. ♀ allotype (upperside); fig. 3. ♂ holotype (underside); fig. 4 ♀ allotype (underside).

Lepidochrysops jamesi claassensi subsp. nov.: fig. 5. ♂ holotype (upperside); fig. 6. ♀ allotype (upperside); fig. 7. ♂ holotype (underside); fig. 8. ♀ allotype (underside).

Poecilmitis nigricans zwartbergae subsp. nov.: fig. 9. ♂ holotype (upperside); fig. 10 ♀ allotype (upperside); fig. 11. ♂ holotype (underside); fig. 12. ♀ allotype (underside).

Poecilmitis palmus margueritae subsp. nov.: fig. 13. ♂ holotype (upperside); fig. 14. ♀ allotype (upperside); fig. 15. ♂ holotype (underside); fig. 16. ♀ allotype (underside).

All figures natural size. Note: The bronzy-brown coloration of the upperside of *L. j. claassensi* is not represented correctly in figs. 5 & 6, in which the tone is much more reddish than in nature. All the other figures in the plate show the true colour satisfactorily. (Colour reproduction by Unifoto (Pty.), Ltd., Cape Town).

seen, not specially broadened). Veining across the submarginal orange-red portion of the wing more conspicuously black-scaled than in nominate race.

Underside.

Dark streak of forewing parallel with the distal-margin, usually so broadened as to coalesce with, or at least touch, the black spots in areas 2 and 4 (one exception in this respect, has been seen). Hindwing with *deeper and more prominent* brown or rufous-brown colouring, as a "zone", beyond the middle of the wing, in nearly all specimens, than in nominate *nigricans*, and this darkening also applying in general to the wing near the base; while in the least darkly marked examples there is, anyway, more contrast between the dark and light areas.

Length of forewing: 12.75 - 15.0 mm. (13.5 mm. in holotype).

Female.

Forewings more rounded distally than in the female of nominate *nigricans*.

Upperside.

Blue from bases of all wings rather deeper and duller than in the female of nominate *nigricans*, and the dark marginal border broader, that of the hindwings more noticeably so, in comparison with the latter taxon. Dark costal border of forewing also tends to be broader and is in some cases much more prominent.

Underside.

The dark streak parallel with the distal-margin of the forewings has not been markedly broadened in all of the females concerned, though broadened in a number, including the allotype.

Length of forewing: 13.25 - 16.5 mm. (the former measurement, in allotype).

♂ Holotype, WESTERN CAPE PROVINCE: Zwartberg Pass, 7.XII.1973 (no collector's name); British Museum Reg. No. Rh. 18699.

♀ Allotype, W. CAPE PROVINCE: data as for holotype 21.II.1977 (Dr. J. B. Ball); British Museum Reg. No. Rh 18700

Paratype in author's collection: data as for holotype (at approx. 5,000 ft.), 29.XI.1969., one ♂ (C.G.C.D.).

Paratypes in Coll. Dr. J. B. Ball: as holotype, 21.II.1977, one ♂ (Dr. J. B. Ball); 2.XI.1968, one ♂ 3.X.1968, three ♂♂ (Dr. J. Kaplan); 7.XII.1973, one ♂ (no collector's name).

Paratypes in Coll. C. W. Wykeham: as holotype, 27.XII.1969, two ♂♂ (C. W. Wykeham); Seven Weeks Poort (Klein Zwartberg), 1.XII.1962, two ♂♂, one ♀ (C. W. W.).

Paratypes in Coll. Transvaal Museum: as holotype, 9.XI.1946, two ♂♂ one ♀ (K. M. Pennington); 29.X.1963, three ♂♂ 29.X.1963, two ♀♀ 4.I.1965, one ♀ 4.X.1965, two ♀♀ 20.X.1966, one ♀ (R. Badham). Seven Weeks Poort (Klein Zwartbergen), 30.X.1941, three ♂♂ two ♀♀ (Dr. G. van Son); 29.XI.1957, one ♂, one ♀ (K. M. Pennington).

The larger examples, of both sexes, of *zwartbergae*, attain a larger size than the largest ones of *P. n. nigricans*.

Specimens of this group from the Fransch Hoek Mountains (and the adjoining Middenkrantzberg) are larger on the whole than the nominate race and both sexes are normally devoid of orange in the cilia, on the upper-side of the forewing, with white spaces only, between the black portions. The black hindwing bands of the males are decidedly wider in most specimens, than in nominate *nigricans*, but with the width varying noticeably in some individual specimens. On the underside, the dark streak parallel with the distal-margin of the forewing tends to be wider than in the nominate race but the hindwing underside is more like that of the latter race, than of *zwartbergae*. This insect can be regarded as representing another race in itself. Male examples from the Hermanus Mountains *seem* to be more similar to nominate *nigricans*: i.e., from the few seen by the present writer.

Grateful thanks are due to Dr. J. B. Ball for furnishing a high proportion of the specimens employed in the study of *P. n. zwartbergae*; and to Dr. L. Vári, of the Transvaal Museum.

A new race of *Poecilmitis palmus* (Cramer).

The striking features of this race of *Poecilmitis palmus* (Cramer) were first appreciated after a male specimen in good condition had been caught by Mrs. K. M. Wykeham, when accompanied by her husband the late K. M. Wykeham, 6 miles to the east of Knysna, in the South Western Cape Province, on 24th January, 1964. In March of the following year the locality was revisited by the writer with Mr. Wykeham and a useful series of further specimens of both sexes, in perfect condition, was secured. The main characters of this race are described below.

Poecilmitis palmus margueritae subsp. nov.

Male (upperside).

Dark basal scaling more extensive than in the nominate race, especially in the hindwing, and of a noticeably darker, bluish-black, colour; the inner-marginal concavity also darker. Black spotting over the orange-red ground-colour of the wings tends to be more prominent than in the nominate race and the distal-margin of the forewings broader; while in the hindwing there is always a continuous black marginal border, which is almost consistently relatively prominent, extending down to at least vein 6. There is less orange in the cilia of the forewing and less encroachment of this on to the actual wing-surface, than in the nominate race: this applying, certainly, to all specimens that have been seen from the type-locality itself.

Underside.

Continuous dark streak parallel with distal-margin of forewing broader and darker than is normally the case in the nominate race and the darkened zones (more or less reddish-brown) of the hindwing, darker and more richly coloured than in the nominate race.

Some darkening of the abdomen is also apparent.

Length of forewing: 12.75 – 14.75 mm. (the latter measurement, in holotype).

Female (Upperside).

All characters as in the male, but the black spotting of the wings is inclined to be even more pronounced, while the black border of the hindwing is also more pronounced and extensive, and contrasts in these respects quite markedly with that of the nominate race.

Underside.

Characters in general much as in the male, but the dark line parallel with the distal-margin of the forewing has not, in the females seen, been widened as much as in the males.

Length of forewing: 14.5 – 16.0 mm. (the latter measurement, in allotype).

♂ Holotype, WESTERN CAPE PROVINCE: 6 miles E. of Knysna, 13.III.1965 (C. G. C. Dickson); British Museum Reg. No. Rh. 18701

♀ Allotype, W. CAPE PROVINCE: data as for holotype; British Museum Reg. Rh. 18702

Paratypes in author's collection: data as for holotype, 24.I.1964, one ♂ (Mrs. K. M. Wykeham); 13.III.1965, two ♂♂, one ♀ (C.G.C.D.).

Paratypes in Coll. Dr. J. B. Ball, W. CAPE PROVINCE: Keurbooms River Forest Reserve, nr. Nature's Valley (30 miles E. of Knysna), 18.XII.1979, five ♂♂. [It may be mentioned that Dr. Ball has discovered other localities for this butterfly in the district as a whole. Some of the specimens concerned have been less extreme than others in the development of the dark marking].

Paratypes in Coll. Transvaal Museum: data as for holotype, one ♂ (C.G. C.D.).

The writer possesses two male specimens of *P. palmus* from the Witteklip Mountain, 23 miles W. of Port Elizabeth in the Eastern Cape Province, captured by Mr. L. Hersalek on 10/12/67 and 15/1/68; and these examples bear a resemblance on the upperside to Knysna ones. Mr. V. L. Pringle has subsequently caught other specimens there and, as he has pointed out, the undersides of this population are not always specially darkened.

The habitat near Knysna is in a slight, sloping depression, somewhat damp and with grass, Bracken and other plants present. One of the chief food-plants of *P. palmus*, the yellow-flowered shrub *Chrysanthemoides monilifera* T. Norl. (Compositae) occurs abundantly there. This particular race of this brilliantly coloured Lycaenid is named with much pleasure after Mrs. K. M. Wykenham – with respect to her second Christian name. The original specimen concerned is figured in colour in *Pennington's Butterflies of Southern Africa*, Pl. 125, fig. 426 III (1978).

THE BEAUTIFUL SNOT: BOMOLOCHA FONTIS THUNB. – I was interested in the reference (*Ent. Rec.* 93: 241) to the occurrence of *B. fontis* in Kent in places where bilberry was absent. In July 1979 I saw several examples of this species in the Gower peninsula, South Wales in a wood where so far as I could see there was no bilberry.

In Staffordshire, *B. fontis* was at one time common in several oak woods with a dense undergrowth of bilberry. From some of these woods it has disappeared following clear felling; although the bilberry remains the insect evidently needs the woodland cover, and it is notable that it does not occur on bilberry on open heathland. More recently, however, there has been evidence that the species is on the increase and it has appeared in several woods from which it was not previously recorded.

Both in Staffordshire and in South Wales there have been single occurrences in moth traps in places where there was no bilberry. – R. G. WARREN, Wood Rindings, 32 Whitmore Road, Trentham, Stoke-on-Trent, ST4 6AP.

THE DOTTED CHESTNUT: *CONISTRA RUBIGINEA* D. & S. (LEP.: NOCTUIDAE)

By BRIG. E. C. L. SIMSON*

On 9th April '81 I went with a friend to try the heaths round Chobham (Surrey) for *C. rubiginea*. We arrived at the spot marked with a X on my friend's map. It was just coming on dusk, but light enough for us to see that we were facing considerable opposition, because three men were engaged in extracting generators, mercury vapour lamps and stands, sheets, bags, nets and all the dread apparatus of the expert moth-snatcher, from the boot of a car parked exactly on our X!

But now it was our X no more, and we were considering going off to search the heaths for a spot we might call Y, when my friend recognised one of the three entomologists as a person he had previously met in a Hampshire wood, when both were after *Trichopteryx polycommata* D. & S. Credentials thus established, we made a plan by which the five of us would make a large circle out on the heath, among the scattered birch trees. My nearest neighbour was about 100 yards from me and had a set-up similar to my own. It was a warm night and soon moths began appearing on my sheet; nothing very wonderful came and I suppose a couple of Scarce Prominents, *Odontotia carmelita* Esp. were the most interesting. After about an hour my neighbour of 100 yards away put out his light and soon I saw him coming towards me with all his gear. As he got level he put down his generator and came across to me. He looked really happy and the reason lay in a box, which he held under my nose. There sat a beautiful *rubiginea*, which had been beastly enough to select his sheet instead of mine. M. V. light makes one look a bit green at normal times; now I must have looked emerald bright. The lucky captor said that he had a bad leg and that was his lot for the night. So off he went hobbling, but humming, into the darkness towards the cars.

I redoubled my efforts to turn, by magic, the wretched *incerta*, which visited me, into beautiful orange-hued moths with black spots. To no avail, and about mid-night, the air having turned cold, I packed up and returned to the cars. Shortly afterwards my friend and the remaining two turned up and I found that my friend had been no more successful than I, but that the others had got two *rubiginea*; one at sugar and another to light. So between five of us three *rubiginea* had been caught. I stared, wistfully, out over the black heath.

And now a very pleasant thing occurred for me. The three, to me, strangers, came up, held out a box in which sat a *rubiginea*, and told me to take it. They said they understood that this was my fourth unsuccessful visit to the locality over the years and that they had a certain female (the one taken at sugar). They were not sure, but felt the one they had given me was also a female, and wished me to have it. It was the one taken 100 yards from my light.

*"Pine Corner", 4 Durnford Close, Chilbolton, Stockbridge, Hants. SO206 AP.

It was a charming gesture, and I was thrilled to accept. Thrilled as anyone would be who has sat on those "blasted heaths" round Chobham, spring after cold spring, hoping to box this elegant moth. So, with many expressions of gratitude, we said goodbye, and I drove home with my friend. I dropped him off at his house and he invited me in so that we could properly examine our trophy. My friend had taken quite a few male *rubiginea* in the past, but had never obtained a female from which to breed a series.

Now it is not easy to determine the sex of a live *rubiginea*, especially as a male, which has just had a good gorge at sugar, fallow, etc, can be very fat bodied. Equally, a female which has not eaten for some time, can be slim bodied. To me the antennae of the sexes appear indistinguishable. So you must imagine the two of us peering through magnifying glasses at our moth and not getting very far, especially as a bright light made it rather skittish. So we gave it a whiff of chloroform and probed even more deeply into the matter. My friend once thought he saw an ovipositor, but I said "wishful thinking". So, as the moth came to, I put it back in the box and set off home, with my friend's pleas not to kill it, at any cost, ringing in my ears. It was a new species for me and in pretty good nick. Doubtless he felt that if it grew restless and started to damage itself, my self control might vanish. To prevent this he had even promised me a specimen *rubiginea* from his own short series.

As soon as I was home I put the moth in a plastic box lined with tissues, and went to bed. Next morning I opened the box very carefully and saw the moth asleep on the side tissue. I made up a solution of honey and brown sugar in water, soaked up as much as a piece of cotton wool could hold, put it in a bottle-top as a container, and placed it in with the moth, which still slept. I looked in the box every morning and was pleased to see that the moth had not in any way injured itself by flying round and that it had been sucking at the honey, as shown by the fluid which it had passed onto the tissues. So the days passed and twice I caught the moth with its proboscis in the bottle top. If one can tame an insect, this was certainly tamed. It showed no fear at my opening the box; it never attempted to fly and on the tenth day I saw a few pure white eggs on the edge of a tissue. I rang my friend, who came over at once and, after careful search, found 14 eggs which he took home with him to hatch. I went on giving the moth fresh honey every other day and by the 19th day of her captivity she had laid 62 eggs, though she did not lay every day. She laid no more after and, on the 21st day, she died peacefully, still clinging to the tissues. As far as I know she never flew in the box and she remained a perfect specimen, fit for any collection, except for being rather pale — but then she had lived for 6 months. My friend took all the eggs for hatching, because we were going to feed the young larvae on apple, of which he had a plentiful supply in his garden.

52 larvae hatched by 6 May and my friend brought me 26, being my share; from these I obtained 24 perfect imagos. Bred *rubiginea* has to be seen to be believed: beautiful indeed. I remain truly grateful to the three generous entomologists I met that April night.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1980: A SUPPLEMENTARY NOTE

47

By R. F. BREThERTON¹ and J. M. CHALMERS-HUNT²

The following corrections and additions should be made to part I of the main report (in *Ent. Rec.* 93: 47-54):

Corrections to Annexe II

D. RAMBURIALIS: S. HANTS: this record should be dated 19.8 and initialed (RLH).

R. SACRARIA: SUSSEX. Worthing should be dated 29.9.

O. OBSTIPATA: for BERKS, substitute OXON (v.c.23)

A. CONVULVULI: for WEXFORD, substitute W. CORK.

U. PULCHELLA: W. SUSSEX: delete (ASE) substitute (RTR)

N. AERUGULA: for (1), substitute (2)

H. PELTIGERA: for BERKS, substitute OXON (v.c.23)

Additions to Annexe I – Recorders and localities

It should be noted that in some cases insects have been reported by two or more recorders. In Annexe II the initials given are those of the recorder from whom the record was received first; but as far as possible the names of all have been included in Annexe I. It has not been generally possible to name the authors of all the records which have been received through intermediaries.

- | | |
|--|---|
| Bellorby, Mr and Mrs C., Westmorland | Howell, Mrs S. J., Hagley Wood, Sussex |
| Blokland, T. J., co. Cork, Ireland | Jago, E. M. R., E. Kent |
| *Burton, J. F., Bristol | *Kydd, D. W., Cumbria |
| Clouter, F., Isle of Sheppey, E. Kent | *McRitchie, B., Harlow, Essex |
| *Dey, D., Sussex and Kent | *Page, B. W., Warwicks. (<i>Bull. am. ent. Soc.</i> , 40:84) |
| *Dunn, T. C., co. Durham, in <i>Vasculum</i> 65: 61 | *Payne, K., Merseyside (<i>Ent. Gaz.</i> 32:64) |
| *Ellis, E. A., mainly Norfolk | *Pons, M. A. S., S. Lancs. |
| *Gent, C. J., Newcastle-upon-Tyne (<i>Bull. am. ent. Soc.</i> 40:84) | Price, L., Stroud, Glos. |
| *Harewood, N. W., Cleveland, N.E. Yorks v.c.62 (<i>Bull. am. ent. Soc.</i> 40: 126 & pers. comm.) | *Read, R. W. J., W. Cumbria |
| *Haynes, R. F. & Hillis, Dr. J. P., Ireland (<i>Irish. Nat. J.</i> 20: 296-298) | *Scott, R. E., wardens' records from 42 R.S.P.B. reserves in the United Kingdom |
| | Walley, P. F., Beachy Head, Sussex |
| | *Welch, R. C., Isles of Mull, Coll, Skye |

¹ Folly Hill, Birtley Green, Bramley, Guildford, Surrey GU5 0LE

² 1 Hardcourts Close, West Wickham, Kent BR4 9LG

- *Hobbs, R. N., Sussex; E. Kent *White, M. C., mainly Worksop
Hall, N. M., Portland, Dorset; district, Notts.
Scilly
Howell, A. D., St Margarets Bay,
E. Kent

Additions to Annexe II – Scarce Immigrant Species

- DANAUS PLEXIPPUS L. WESTMORLAND (v.c.69). Grange-over-Sands, 12.10, One seen flying in a garden (CB per DWK).
N. POLYCHLOROS. E. KENT. St Margaret's Bay, 28.8., male (ADH).
R. SACRARIA. E. KENT. Dungeness, 7.8. (DCB).
O. OBSTIPATA. MID CORK. Ballymaloe, 8.8; Ballyhooley, 24.8.
W. CORK. Castletown, 24.8. (RFH & JFH). DORSET. Portland, 28.9 (NMH). ORKNEY. Orphir, 27.8 (RIL).
A. CONVULVULI. LOUTH. Dundalk, 6.10 (RFH & JPH). MONMOUTH. Usk, 3.10 (GANH).
M. UNIPUNCTA. SCILLY IS. 17-24.9, with *P. saucia*, becoming common at sugar and ivy towards the end of the week (NMH).
H. ARMIGERA. E. KENT. Minster-in-Sheppey, 16.8, one at light (FC).
H. PELTIGERA. DORSET. Portland Bill, 6/7.6, two (NMH). N. GLOS. Kingscourt, Stroud, 13/14.6, one (LP).

Of these additions the record of *D. plexippus* in Westmorland is the only one of the year, and probably the first for that vice-county; and the specimen of *N. polychloros* caught in Kent appears to be the first reported there since 1977.

Among the commoner species, most of the supplementary British records of *V. atalanta* reflect either its initial association on arrival with *C. cardui* or its unusually poor performance thereafter, though in Cumbria it had achieved rough equality in numbers with that species by September (DWK). There is also an interesting note of twelve seen flying south or south west at Hastings. E. Sussex, on September 20 (RNH). In Ireland, however, *V. atalanta* clearly enjoyed a very good year, with a total of 1,422 reported. Although arrivals in June were, as in Britain, fewer than those of *C. cardui*, it seems to have bred more successfully, being described as very abundant in August and September. It was also noted in very large numbers at Cape Clear Island, W. Cork on several dates in October (RFH & JPH). These may have represented south westerly movement of Irish bred butterflies, or further immigration which was not paralleled in Britain.

For *C. crocea* we have one additional record in June, at Hagley Wood, Sussex (SJH) and over a dozen for the late August and early September immigrants, ranging from Dorset and Anglesey to Cumbria, which raise the British total to about 80. In Ireland, where the June immigration was much stronger and extended as far north as Ulster, where there was probably some local breeding, the late August invasion was mainly to the south east and agreed

in date with the arrivals in Cornwall and movement up the west coast of Britain. In Ireland the recorded total, also about 80, was the highest since 1975. For *M. stellatarum* there are two additional records, from Bristol, June 15 (JFB) and Kendal (DWK) to add to what was in England a fairly good year; but the Irish total of six, between late May and early September 30, was not distinguished.

Several supplementary records of *U. ferrugalis* emphasised its abundance and ubiquity here, as in Ireland; but *P. xylostella* seems to have been much less common there.

Corrections to Annexe III – Cynthia cardui

LANCASHIRE, N. Leighton Moss 31.8: for corrected dates and numbers, see below.

Additions to Annexe III

BEDFORDSHIRE. Sandy, 7/13.6, one present; 3.8/4.9, seen on 13 days, maximum 5 on 10.8; 8.10 (1); Sutton Fen, 5/8/4.9, seen on 5 days, one or two. (RES).

BERKSHIRE (v.c.22), Kennington, 7.9, one (JFB).

CAMBRIDGESHIRE (v.c. 29), Great Evenden, 7.6, one (EAE); Fowlmere, early 8, numerous; Ouse Washes, in first three weeks 8 (RES).

CHESHIRE. Gayton Sands, 8/13.6, July one, 14.8/4.9; Wirral, 13.8, many worn (MASP).

CUMBERLAND. St. Bees Head, large numbers arrived in June (RES); Corkickle and elsewhere 7.6 (4); Kirkland, 2.7, one on flowers of *Hypocheris radicata*; near Egremont, 9 and 10.8 (2); Nethertown and elsewhere 16/31.8 (14); Walbarrow Crag, 19.10, one (RWJR); Kendal, 1.6 (1), Solway Marshes 4.6., c.40/50 (DWK).

DERBYSHIRE. Buxton, 26.6, one (EAE).

DEVON S. Aylesbeare Common, 4.6/5.7 (3), 11/31.8, with maximum of 8. (RES).

DORSET. St. Albans Head, 16.7 (2); Studland, 17.7 (1) (MCW).

DURHAM. Butterknowle, 28.6, one; Sunderland, 31.7, c.20 along a garden hedge, 1.8, dozens on cliffs; Quebec, 12.7, one; Chester-le-Street, 29.7.(2), 31.7 (1), 1/3.8 (20/40); 14.8, many; 8.9 (1); Waldrige Fell, 17.8 (1).

ESSEX S. Harlow, first seen 29.6, in late July and August many reports of singles and occasionally of two or three (BMCR).

GLOUCESTERSHIRE S. Nagshead, 12.6., 13.6, 18.6, 12.8, all singles (RES).

HAMPSHIRE S. Langstone Harbour, 13.6 (1), 23.8(2) (RES).

KENT E. Clowes Wood and elsewhere 10/23.8 (8); Rainham, 3/7.9 (3), Folkestone, 7.9 (1) (D.D.); Folkestone, 5/16.8 (7), 20/25.8 (22), 24.8, common, 25.8 (12), 1/8.9, still common, especially on knapweed; 3.10, one (EMW).

ISLE OF WIGHT. St. Catherine's Point, 4.6., one off the sea

LANCASHIRE N. Leighton Moss, June, small influx (peak 3), very large influx from late July, with peaks 14.8 (58), 16.8 (138), then falling quickly in poor weather (RES).

- LANCASHIRE S. Ainsdale N. N. R., June, second week, large influx; in July larvae on isolated plants of *Cirsium vulgare*, but *not* on the dense patches of *C. arvense*; fresh adults appeared August, first week, and remained until mid-September; no larvae then seen, but a number of fresh adults in October, second week. (KP).
- LINCOLNSHIRE N. Tetley Marsh, large numbers (RES).
- NORFOLK W. Wells-on-Sea, 7.6.(1); Swaffham, 8.6 (1); Tottlingstone, 7.6 (1) (EAE).
- NORFOLK E. Beeston, near Sheringham and five other places, 10/16.6, all singly; Hoveton, 12.7, one; Hickling, 2.8, several (EAE).
- NORTHUMBERLAND N. Black Law, c.1,000ft, near Wooler, 29.7, sudden appearance, groups of 3 to 5 flying south all day and through 30.7, 31.7, 1.8, after which thunderstorms checked observation, and later the butterflies had dispersed; Kyloe, 1.8, dozens seen (TCD).
- NORTHUMBERLAND S. Coquet Is., 24.6 (1); 29.7, large influx (more than 30), decreasing until a few still present in mid 8. (RES); West Gosforth, 1.8 (1), 2.8 (10 on buddleia) (CJG/TCD).
- NOTTINGHAMSHIRE. Worksop district, 6.6 (2), 8.6 (2); 30.7 (1), 1.8 (1), 10/16.8 (43), 19.9 (2) (MCW).
- SOMERSET N. Failand, near Bristol, 11.6, one at hedgerow flowers (JFB).
- SUFFOLK E. Halvergate Island, 2.6 (1), 28.6 (1), July (2), August first week, very abundant; Minsmere, 12.7/18 (5) (RES), 16.8 (2 fresh) (JFB); Wolves Wood, 1.8 (1), 2.8 (1); Felixstowe, 8.6 (1) (EAE).
- SUFFOLK W. Lakenheath, 8.6 (12) (EAE).
- SUSSEX E. Fore Wood, mid-June, on two days, mid August, one (RES); Hastings, 20.9 (1) (RNH).
- SUSSEX W. Rogate, numerous mid September, especially 14.9 (JACG).
- WARWICKSHIRE. Charlecote, 28.9, 4 larvae in separate tents on nettle — emerged 23/24.10 (BWP).
- YORKSHIRE N. E. (v.c. 62). Cleveland. Saltburn and Redcar dunes, 3.6, later widespread inland and through industrial Teeside; mid 7 a few worn. later in large numbers (? emerging) to mid 8, then vanished, late 9, a few on *Sedum*. Larvae from newly hatched to fully fed from early 7 to 2.8, with 200 on dunes in three days; all those collected pupated by 10.8. Early 9 / early 10, c.600/700 larvae found and most collected, some producing adults while others were still feeding, and butterflies still emerging in captivity 11.11. No Larvae were parasitized (NWH).
- YORKSHIRE S. E. (v.c. 61), Bampton Cliffs, 7.6 first, odd singles in July, maximum 16.8 (10); Hornsea Mere, 24.6/21.9, maximum 30.7: largest immigration for many years; Blacktoft Sands, first late 7, 1/21.8 c.10 daily (RES).
- YORKSHIRE MID. (v.c. 64). Bishopthorpe, 25.9 (MCW); Fairburn, 3.7. (1), 31.7/3.9 in good numbers (RES).

Ireland

ANTRIM. Rathlin Island, 5.6 (58), 15.6 (70), regularly later; Shanes Castle, 8.6 (1); 24.9 (2) (RES).

CORK. Lemara, 7.8 (1), 10.8 (1) (TJB).

For other Irish records, total 1,751, see RFH and JPH, *Irish Nat Jnl.*, 20: 296-298

Scotland

ABERDEENSHIRE N. Loch of Strathbeg, 5.6/8.9, maximum 31.7 (6). (RES).

ANGUS. Loch of Kinnordy. 11.6, 23.6, 7.7, singles; 31.7/2.8, up to 4 present; recorded in 8 at 3,200ft. (RES).

INNER HEBRIDES (v.c. 104), Skye, Glen Brittle, 14.6, Dunvegan Castle, on *Armeria*, Claigan Beach (2), Loch Bharcasaig, 17.6 (REW).

INVERNESS SHIRE E. Loch Garten, 12.6 (1), up to 2 on four days 8; Insh Marshes, 9/22.6, singles, 12/22.8, singles, 17.8 (3) (RES).

MULL and COLL (v.c. 103). Salen, Mull, 9.6 (1) (RCW).

PERTHSIRE W. Killiekrankie, influx from 6.6 on. (RES).

RENFREWSHIRE. Loch Winnoch, from 8.6, with up to 8 regularly in late 6, 7, 8 (RES).

SHETLAND. Loch of Spiggie, 22.6, 6.7, 31.7, 1.8, all singles; 2.8. (6), regularly until 16.8 (RES).

Wales

ANGLESEY. South Stack, 3.6/4.7, and again 7.8/11.10 (RES).

BRECONSHIRE. Gorse Bank, 26.6, with maximum 20.9 (6); other localities 26.6 onwards, at least 77 specimens, last Maescelyn, Brecon, 26.10 (PS-B).

DENBIGHSHIRE. Llanduno and Llandrillo, 3.8 (3) (MCW).

GLAMORGAN. Ynys-hir, first 3.6, up to 6 until 3.7; 10.8 (1); 4.9/15.10, again in numbers (RES).

MONTGOMERYSHIRE. Lake Vyrnwy, common in latter half of the summer (RES).

MONMOUTHSHIRE. Beaufort, 4.10, at 1,200ft (PS-B).

Our appeal for more information about *C. cardui* in 1980 produced a wide response: a great many records came from collective recorders who have passed on information from several hundred observers whose names are too numerous to mention here. We are especially indebted to Mr. R. E. Scott for collecting and submitting notes from the wardens of some 40 reserves of the Royal Society for the Protection of Birds. We have also made use of the valuable analysis of *C. cardui* records in Ireland which was provided by Mr. R. F. Haynes and Dr. P. Hillis and later published in the *Irish Naturalist's Journal*, but is not reproduced in detail here. For information about larvae we are very grateful for the accounts of findings in Cleveland by Mr. N. W. Harewood and Mr. K. Payne, which have also been published elsewhere.

These additional records include some from 20 vice-counties not mentioned in our main report, but for the most part these

confirm the impression that the spread of *C. cardui* was thin and limited in extent far inland and away from the main coastal arrival points, though spread from these along the coasts was fairly widespread. The strength and timing of the main invasions of the west coast of England in the first week of June, and of the north east coast of both England and Scotland in the last days of July, are abundantly confirmed; but the additional records also show that there were relatively weak influxes to East Anglia and further north at the same time, slightly in advance of the mass invasion of Fife and Aberdeen on June 5 and 6. These were apparently not linked by arrivals on the south English coast between south Devon and east Kent, and they may have had a separate continental origin. The extent, the timing, and indeed the existence of a third large invasion to the west of England in late August or early September, which we previously thought likely, remains uncertain. Further accounts of the finding of large numbers of larvae in the open again mention the presence of widely differing instars at the same times and places. This surely implies, where the larvae and pupae survived, the emergence of adults over a long period, and it is possible that even the large numbers of butterflies seen in various places from mid August onwards resulted from this rather than from fresh immigration. The few examples reported from the Isle of Sheppey and now from Folkestone in October may well have been grandchildren of the original June immigrants.

In Ireland the pattern was interestingly different. The whole eastern coast from Wexford to Antrim clearly shared in the swarms which visited western Britain in June: more than one third of the Irish annual total was recorded there then, but records in south western Ireland were very few. As might be expected, Ireland felt little or no effect from the eastern invasion of Britain of *C. cardui* at the end of July; the numerous records in the eastern Irish counties are attributed to successful local breeding from the June immigrants. In October, however, Waterford scored 72, Cape Clear Island, Co. Cork 527, and Galway 54, thus equalling the total for June. This must surely represent a further major immigration from the south west, which was apparently not experienced at all in Britain.

LARVAE OF CAMPTOGRAMMA BILINEATA L.: YELLOW SHELL FEEDING ON CRUCIFERAE. — With reference to B. K. West's note (*Ent. Rec.*, 93: 198) on *Camptogramma bilineata* feeding on *Cardamine flexuosa*, I can add three more species of Cruciferae as larval foodplants. In the winter of 1979-80 I found a larva on *Arabis caucasica*, a common rock-garden plant, introduced from south-east Europe, and in the spring of 1980 one was found feeding on *Aubretia deltoidea*, another rock-garden plant, introduced from Greece. Both records are from my garden at Leicester, where a larva has also been found on *Origanum majorana* (Labiatae). The third record is of a larva found feeding on wild cabbage, *Brassica oleracea*, growing on the cliff-tops at Lighthouse Down, Dover, in the spring of 1981. All three larvae eventually produced moths. — DENIS F. OWEN, 6 Scraptoft Lane, Leicester.

THE EARLY STAGES OF *PARORNIX FINITIMELLA* 53
(ZELLER) AND *P. TORQUILLELLA* (ZELLER)
(LEPIDOPTERA: GRACILLARIIDAE)

By A. M. EMMET*

Parornix torquillella was placed on the British list in the same year as that in which it received its name in Germany (Stainton, 1850). Later Stainton (1864) gave a full and accurate account of its early stages. He described it as bivoltine flying in May and August, but with reservations, since he had taken the adult in July and adults from July larvae had not emerged until the following year. Morris (1872), Meyrick (1928) and Ford (1949) all treated the moth as bivoltine, ignoring Stainton's uncertainty.

Parornix finitimella was named and described in the same paper as *P. torquillella* (Zeller, 1850). Although Stainton (1850; 1864) made reference to it, he did not include it as a British species. However, he stated that he had reared an *Ornix* [*Parornix*] from sloe which was not *P. torquillella* (1864: 296). He tentatively determined these moths as the *Crataegus*-feeding *P. anglicella* (Stainton), but added that they should possibly be referred to *P. finitimella*, a supposition we can now tell to have been correct. Neither he nor any other contemporary British entomologist followed up this hint and more than half a century was to pass before this common species was confirmed as occurring in this country.

When this happened, its recognition by Pierce (1917) was only a chance by-product of his work on the genitalia of the Geometridae. In this study he was helped by the Revd. C. R. N. Burrows who was vicar of Mucking, an Essex hamlet on the Thames estuary. Pierce used to stay with Burrows and the two entomologists were struck by the number of interesting microlepidoptera in the area. Burrows, however, was only a macrolepidopterist and could not determine them. Accordingly, Pierce suggested that Burrows should make a collection and send the moths to him for identification (Pierce, 1918). It was amongst this material that he found *P. finitimella* after dissection of the genitalia. The discovery did not arouse much interest because concern with the microlepidoptera had to a large extent lapsed in Britain. Few collectors checked their specimens and Meyrick (1928) was able to give only the counties of Essex and Durham for the occurrence of *P. finitimella*. No attempt was made to look at the early stages to see if there were any differences and for another fifty years no further thought was given to the subject.

This was the situation I inherited in 1979 when *A Field Guide to the smaller British Lepidoptera* was written. My attempt to add useful information was disastrous, for I got it the wrong way round. I had recognised that there were two mine patterns, one of which seemed the more common. Understandably, in view of the history

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of the two species in Britain, I ascribed the commoner mine to *P. torquillella*.

It was not until 1980 that I began to make a serious study of the early stages of these moths for Volume 2 of *The Moths and Butterflies of Great Britain and Ireland*. I wrote the draft text of the Gracillariinae in the winter of that year and devoted my field work in 1981 to checking and embellishing what I had written. Consequently the information which follows has been well digested.

As the result of my research, I found that the species were readily distinguishable in their early stages and that these differed in their timing. Dr. M. R. Shaw had written to me in 1979 suggesting that *P. torquillella* was univoltine and this was confirmed by my observations in 1980-1981. It appears to have a long emergence period extending from the end of May until July. Larvae do not appear until mid July and continue through August and September. The resulting adults do not emerge until the following year (cf. Stainton's observations quoted above). It would be possible for the earliest moths to produce a generation which completes its cycle in the summer months but I have no evidence that this ever happens.

The larva of *P. torquillella* has two cloudy dark marks on its head, which are sometimes obsolete. Its body is pale yellowish green without contrasting pinacula, its prothoracic plate has the four black spots characteristic of the genus and the thoracic legs are colorous with the body.

P. finitimella, on the other hand, is definitely bivoltine. Moths of the first generation fly in late April and May. Larvae are then found in June and July which produce a second generation of adults in July and August. Larvae occur again in September and October and give rise to the overwintering pupae.

The larva of *P. finitimella* is very different. It has four well-defined black marks on its head as well as the prothoracic plate. Its body is grey with conspicuous paler pinacula which are obsolescent on the abdominal segments; it becomes much paler when full-grown, but still retains a hint of its grey colour. The thoracic legs are ringed black, appearing wholly black except under magnification.

There are no detectable differences in the mines in the sap-feeding phase (the first two instars). There are, however, distinctions in the third instar mine, when tissue-feeding begins after the change in mouth-parts and a spinneret has been developed. *P. finitimella* spins the lower cuticle more extensively, causing it to contract in a number of creases and draw the lower edges of the mine together; the lower cuticle becomes greenish grey, flecked darker. The mine is relatively long and narrow. *P. torquillella*, on the other hand, spins the lower cuticle lightly; the mine is only slightly arched and the cuticle has a single central crease and is white, at any rate in tenanted and newly vacated mines. The mine is relatively shorter and broader and is transparent when held up to the light. Because of the lighter spinning, the mine splits open more easily, and the old ruptured mines which are so much in evidence on blackthorn bushes in autumn are generally of this species. In my experience, fresh

mines are easily told apart, but the marks of distinction tend to become blurred with the passage of time and it may then be necessary to study the characters of a number of mines before being sure of the species. A complication is that in southern England both are abundant and mixed mines will almost always be found on the same bush.

With regard to distribution, *P. torquillella* has the wider range, extending to Scotland and Ireland. *P. finitimella* becomes scarce in northern England and Meyrick's record from Co. Durham is still the most northerly; it has not been reported from Scotland or Ireland. In the south one gets the impression that *P. finitimella* is the more plentiful, but this is probably because in autumn one sees two generations of its vacated mines as opposed to one of *P. torquillella*. When I was making records for Essex (Emmet, 1981), I had not mastered the differences and, as I admitted, I might have recorded *P. finitimella* as *P. torquillella* in some instances. I then recorded *P. torquillella* from 56 of the 57 10X10 km squares in the county but *P. finitimella* from only 9. In 1981 I have increased the number of squares for *P. finitimella* to 52 and confirmed *P. torquillella* in all of these. There is hardly a stand of blackthorn in the county in which I have not found both species, if I have had the chance to search at the right time of year. What is true for Essex probably holds for all other southern counties.

With the knowledge I now have, I would rewrite species 281 and 282 in the *Field Guide* as follows.

281 (1102) *P. finitimella* (Zell.)

O. 5-6; 8-9. On the under surface of a leaf of *Prunus spinosa* or *P. domestica*.

L. 6-7; 9-10. When young, in a gallery in the lower epidermis which leads into a small, *Phyllonorycter*-type blotch in which the lower cuticle turns greenish grey and is strongly contracted by internal spinning. Later feeds under the downwards-folded tip or edge of a leaf, making successively two or three such folds. Larva grey with paler pinacula; head with four black spots; thoracic legs ringed black.

P. 7-8; 9-4. In an orange-yellow cocoon spun under a narrowly folded leaf-edge or in leaf-litter.

I. 4-5; 7-8. Comes to light.

282 (1103) *P. torquillella* (Zell.)

O. 6-8. On the under surface of a leaf of *Prunus spinosa* or *P. domestica*.

L. 7-9. Mine differs from that of *P. finitimella* in being only slightly contracted by internal spinning and having the lower cuticle white. Larva pale yellow-green without conspicuous pinacula; head with two darkish spots; legs yellow-green.

P. 9-5. Similar to *P. torquillella*.

I. 5-7. Has a long emergence period.

Possessors of the *Field Guide* who do not have the interleaved edition may prefer to make less extensive changes. I suggest that the

first priority is to alter the last word of the second line of the "L" paragraph under *P. finitimella* from "less" to "more", and the second to amend the timing of the stages of *P. torquillella*.

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PAPILIO MACHAON L. (SWALLOWTAIL) FLOURISHING IN A N. NORFOLK LOCALITY, 1981. — The present year having been a poorer one for butterflies (at least in my district, S. E. London) than I have experienced for very long, it is some small consolation to be able to report that one of our threatened species, *P. machaon*, was quite common in a small area of a privately-owned fen in North Norfolk. On a very warm afternoon, 22 June, these splendid creatures — apparently at the height of their season, being in mint condition — were disporting themselves in the open flowery fen, often swooping and perching on various blossoms (mostly purple composites), their wings maintained in tremulous motion whilst feeding in the manner peculiar to their kind, and presenting an unforgettable spectacle. It was possible to have 6, if not 7, in view at a time, their territory seeming to be concentrated by the apparent restriction of the foodplant, hogs' fennel, to one spot in that part of the fen which we visited. The butterflies were not shy; in fact, one seemed bent upon trying to enter my net as I was stalking a fly, and had to be 'shooed' away! We learnt from the landowner that, so far as he knew, *machaon* has never been 'put down' there, but had been present from early times. — A. A. ALLEN.

By ALAN E. STUBBS*

After false starts and a stormy passage through Parliament, new legislation affecting a wide range of countryside issues has been passed.

An item of particular concern to entomologists is the list of protected species. At earlier steps in the evolution of the new legislation there was consultation with the Entomological Societies, and in particular through the Joint Committee for the Conservation of British Insects. However, the scope and nature of the draft legislation became greatly modified in its passage through Parliament. There are two major reasons for the changes in the list. Firstly, as an all embracing act there were no concessions to entomologists — thus, area listing and other conditions were swept aside to suit those interested in vertebrates. Secondly, it proved virtually impossible to influence events when neither of the Houses of Parliament has anyone with a knowledge of insects (the system depends on the right questions being asked).

There are now 19 species of invertebrates on the protected list. Discussion here will concentrate on the Lepidoptera since this will be the main concern of readers.

Large Blue (*Maculinea arion*). This was already protected under the Wild Creatures and Wild Plants Act 1975. In September 1979 the Nature Conservancy Council issued a press notice saying that the butterfly was probably extinct in Great Britain. No sighting accepted as authentic has been received since that date, despite checking out various reports.

Heath Fritillary (*Mellicta athalia*). With some reservations, the Societies had earlier accepted the inclusion of this species. It has been undergoing steady decline in the South-West where it is now down to two sites. There are real fears that it could die out in this area. However, in January 1982 the Duchy of Cornwall agreed to the removal of young conifers from its main site and NCC hopes to finance a study starting this summer. In Kent, the population level is erratic depending on the state of the coppice areas. Whilst numbers can be large in a good year, colonies could easily be collected out during population lows.

Chequered Skipper (*Carterocephalus palaemon*) was last seen in England in 1975 and was intended for protection in England only. With the various delays in the legislation it is now questionable whether it will be refound. However, the Act gives national listing though its status in Scotland is not critical.

Swallowtail (*Papilio machaon*). This was sneaked on as a complete surprise, apparently because it is pretty and MP's have heard of it. NCC had 20 minutes to reply at a time when no-one with a knowledge of the insect was available. The advice that would have

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been given was that this butterfly, though local, is largely holding its own in Norfolk and is in no imminent danger. It is not the sort of species which would easily be collected out (the prospect of a Yare barrage is a far greater threat). Some people hold the view that now this species is on the Act, it should stay there as a flag waver for gaining public interest in insect conservation. (On a similar short notice occasion NCC successfully advised against the Purple Emperor being put on the Act.)

There are five moths on the Act. The Essex Emerald (*Thetidia smaragdaria* F.) was added to the 1975 Act in 1979 (see *Ent. Rec.*, 91: 258-60) since it was down to a very small colony; there are rumours of a second colony but its status remains critical. The Barbary Carpet. (*Pareulype berberata* D. & S.) has only one small native site, as has the New Forest Burnet (*Zygaena viciae* D & S.) and the Reddish Buff (*Acosmetia caliginosa* Hbn.). The Black-veined moth (*Siona lineata* Scopoli) has few localities.

The protected species among other invertebrates are one dragonfly (*Aeshna isosceles*), three Orthoptera (*Decticus verrucivorus*, *Gryllus campestris* and *Gryllotalpa gryllotalpa*), one leaf beetle (*Chrysolina cerealis*), two spiders (*Eresus niger* and *Dolomedes plantarius*) and three snails (*Monacha cartusiana*, *Myxas glutinosa* and *Catinella arenaria*).

All the above species are protected in England, Scotland and Wales, with provision for fines of up to £1000 per specimen taken or possessed illegally. It is illegal to disturb these species so netting a swallowtail to look at is against the law. Should anyone accidentally take a protected species, for instance a Reddish Buff moth in a light trap, then it should be released; if not recognised as such until dead and set, then it is best to inform NCC of the circumstances. Specimens obtained before 1982 are in the clear. It is however, illegal to trade or barter (or to advertise to do so) in these species or to receive specimens under these circumstances. It is possible to give away prior breeding stock or old specimens providing this is genuinely free rather than barter.

The Nature Conservancy Council does not wish to see long lists of species on this sort of Act anymore than entomologists do. Apart from the administrative implications, there is no point invoking the cumbersome arm of the law against collecting unless there is a real concern that collecting will endanger the survival of a species. In future it will be NCC who has prime responsibility for the listing on species. Such legislation emanating from Parliament is not directed at tripping up the responsible entomologist, it is there as a long stop against people who behave selfishly and irresponsibly towards endangered species.

Entomologists will share the view that conservation of habitats is the most important measure required. Here the Act has very substantially increased the safeguard for Sites of Special Scientific Interest, indeed NCC is now in a position to have a substantial say in how sites should be managed and, specifically, how they should not be managed. It is now imperative that the important entomological sites are given proper protection and that the most

damaging types of management are avoided. The Invertebrate Site Register organised by NCC is timely in these respects and it is hoped that entomologists will take full opportunity to see that their interests are taken into account.

THE USE OF THE TERM 'POCK-MARK' IN ENTOMOLOGY. — Coleophorid leaf-mining larvae make a small entrance hole in the cuticle, the case being fixed at its orifice to the edge of the hole, so that the larva can fully extend itself to feed on the parenchyma without having entirely to quit the safety of its case. The larva then detaches its case and moves elsewhere, leaving behind a conspicuous blanched portion of leaf where it has fed and the tell-tale circular hole so familiar to microlepidopterists. In appearance, this hole resembles in miniature a pit or scar left by a pock, and so 'pock-mark' is suggested as a suitable term for this characteristic and well-known feature among the Coleophoridae. — J. M. CHALMERS-HUNT.

COLEOPHORA PARIPENNELLA ZELLER — A NEW FOODPLANT. — A single larval case of what appeared to be *Coleophora paripennella* was found on 9th June 1981 feeding on *Cirsium arvense* on a wide verge adjacent to the A 299 Thanet Way at Whitstable, Kent. The larva fed for about a week on *Cirsium* and the moth emerged on 14th. July 1981, which Dr. J. D. Bradley very kindly confirmed as *C. paripennella*. Other micro-lepidopterists are believed to have recorded this species from *Cirsium* but I can find no published reference. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

CARPOPHILUS SEXPUSTULATUS (FABR.) (COL.: NITIDULIDAE) IN SURREY WITH A NOTE ON ITS HABITS IN BRITAIN. — Amongst beetles revealed by removing the loose bark of a large oak log on 17.iii.1981 in Richmond Park (TQ 1871) was a single example of this species. This would appear to be a new record for the vice-county of Surrey.

In a report for the Institute of Terrestrial Ecology entitled "A Bibliograph of the occurrence of Certain Woodland Coleoptera" by Paul T. Harding (1978), *Carpophilus sexpustulatus* is referred to grade 3 ("indicator of Old Forest in certain circumstances"). This is borne out by the present finding, seeing as Richmond Park has existed for some considerable time.

Occasionally found in stored products, the beetle is found in normal circumstances under the bark of logs — usually those of oak, but also beech, hornbeam, spruce, pine etc. However it seems that the adult will visit carrion (vide *Ent. Mo. Mag.* xviii. 1907, p.82). Most captures stem from the period January to June. The published records of which I am aware give rise to the following list of vice-counties — all in England: 8, 15, 16, 25, 31, 56, 63, 64.

I thank Messrs A. A. Allen, P. M. Hammond and P. T. Hammond and P. T. Harding for their comments. — D. PRANCE, 23 Brunswick Road, Kingston Hill, Kingston-upon-Thames, Surrey.

THE DIPTERA (CALYPTRATAE) OF THE SANDWELL VALLEY, WEST BROMWICH.

By M. G. BLOXHAM*

(Concluded from Volume 94, page 31)

Calliphoridae

The Calliphoridae provide interesting records, three species of limited distribution occurring, these being *Bellardia unxia*, the least common representative of an otherwise abundant genus, *Pollenia varia*, of which only a single specimen has been taken, and *Calliphora subalpina* which occurs in some numbers in most woodland in the valley. The latter species is not only considered an uncommon insect but also an unlikely capture in this area according to present knowledge of its distribution (Van Emden 1954). Of the other species, *Cynomyia mortuorum* has been recorded during most summer months on one particular site but it has never been numerous, *Phormia terraenovae* also falling into this category. The remaining flies of this family are usually abundant throughout the year.

Scathophagidae

Although certain flies of this family are very numerous, the number of species occurring is not great. The four flies of the genus *Scathophaga* are all common on most sites, several other diptera including the bluebottle *Calliphora vicina* and the crane fly *Limonia tripunctata* having been recorded as the prey of *S. stercoraria*. *Norellisoma spinimanum* is often abundant in gardens and at margins of streams. Of the other genera, *Nanna fasciata* is common in many damp places during spring and early summer, *Juncus* species often being very good indicators of likely sites for this fly, while *Carex* beds at the margins of the larger pools house good populations of *Cordilura impudica* and *C. pudica*. *Cleigastra apicalis* is distributed even more widely in similar situations, on one occasion a specimen being taken with the tipulid *Erioptera griseipennis* as prey.

Anthomyiidae

At present there is no R.E.S. handbook for identification of Anthomyiidae and anyone undertaking this task has to rely to a fairly large extent on continental works, as English papers deal with a few genera only. It is therefore probable that the family is still unfamiliar to many dipterists and for this reason, a certain amount of general information on most of the species recorded is included here.

One of the features that makes the family a difficult one to study is that species, even in different genera, are so very similar in the field. This usually means that it is necessary to make ex-

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tensive captures and carry out a microscopic examination of every insect to ensure that species are not overlooked. An additional complication is encountered in that females are often difficult, if not impossible, to identify with certainty and in most cases only careful examination of the genitalia of the males enables the flies to be identified correctly. The species list given for the valley is, therefore, with two exceptions (*Leucophora grisella* and *Eustalomyia festiva*) based on the examination of males.

Of the genus *Chirosia*, three species have been recorded: *C. albitarsis* and *C. parvicornis* having been taken on bracken, the larvae mining the leaf of that plant according to Collin (1955). His observations suggesting the probability of a flight period limited to May and June for *parvicornis* also seem to be corroborated, as the fly was not seen in the locality after the first week in June. The final species recorded, *C. flavipennis*, also occurred in the vicinity of bracken, although no direct association with the plant seemed evident.

Many *Pegohylemyia* species do not seem to be confined to a particular habitat, *P. fugax* being one of the most abundant and widely distributed flies in the locality. The same comments apply to flies of the genus *Lasiomma*, the two species recorded often being found basking on fences during spring and early summer.

The five species of *Hydrophoria* have all been taken in woodland, *H. annulata* and *H. caudata* having been discovered in very shaded situations, the others in open glades or at the margin.

Of the very common anthomyid species, *Craspedochaeta pullula* and *Anthomyia imbrida* are good examples. Both are found in nearly every situation although *C. pullula* does not seem to favour shade as much as *A. imbrida*. Also encountered in numbers during spring and early summer are *Phorbia securis* and *sepia*, which may often be seen basking on fences.

The genus *Leucophora*, like Sarcophagidae associated with Hymenoptera, is well represented and four species are recorded. The closely similar *L. obtusa* and *L. personata* are abroad fairly early in the year in the vicinity of bare ground such as paths and stone heaps, often being present in some numbers. *L. cinerea* and *L. grisella* occur rather later and are apparently more selective in their chosen sites, isolated specimens have so far been discovered only in the vicinity of natural sand pits occurring as a consequence of the weathering of breccias. On the sites mentioned, hymenopterous activity was usually evident, but no attempt was made to determine species present or study any possible associations between the wasps and flies.

Smith (1971) gives information on the occurrence and distribution of *Eustalomyia* species associated with solitary wasps nesting in dead wood and Chandler (1976) also comments on the occurrence of these flies. There seems to be agreement that the species are uncommon in Britain except in certain localities. Observations of *E. festiva* and *E. histrio* in the valley indicate a distinct preference for ancient woodlands, as the insects are only found in one such

area of about 20 acres, being particularly associated with ash trees, on which both species have been taken while basking. Wooden posts and rails nearby were also popular for this purpose. Although the flies have a long flight period in the valley, they never occur in numbers and it is interesting to note that while males of *E. histrio* have been taken, no male of *E. festiva* has yet been captured, an experience also recorded by Chandler (*op.cit.*).

Of the *Delia* species, four seem to be abundant, but *D. lamelliseta* has been taken only once on open meadow land and the solitary *D. criniventris* specimen was netted at the border of a marshy pond in woodland. Of the genus *Hylemya*, all three species seem common in woodland and scrub areas throughout the valley, *H. strenua* also occurring in gardens.

Some flies of certain calypterate genera notably *Melanomya* (Rhinophoridae), *Hebecnema* and *Spilogona* (Muscidae), are conspicuous in the field by virtue of their strongly blackened wings and males of the anthomyid genus *Heterostylodes* also exhibit this feature. *H. pratensis* was taken at the margin of a wood where it was nearly overlooked owing to its similarity to flies of the other genera mentioned.

While *Paregle radicum* can stake a good claim to be the most abundant and widely distributed Anthomyid in the locality, *P. cinerella* has been recorded only once, a specimen being discovered on a paddock fence post. The well known association of certain flies of the genus *Egle* with *Salix* species is confirmed, the three species all having been taken in early spring on *Salix caprea* catkins, *E. muscaria* having also been captures in a number of other situations. *Nupedia infirma* apparently has a very long flight period and has been found on wooden railings during most of the summer months. It has been recorded as the prey of *Dioctria baumhaueri* on two occasions. In early and late summer, *Pseudonupedia intersecta* often occurs in numbers in such places. The same cannot be said of *Emmesomyia villica* which seems not only to have a limited flight period, but also to be a scarce species. Two males were captured on hawthorn on consecutive dates, but visits to the same area on a number of other days throughout the year failed to reveal any more specimens and none were found elsewhere.

Among the larger anthomyids found in the woodlands is *Pegomya praepotens*, which is to be seen on tree trunks and low vegetation during June and July. According to Chandler (*personal communication*) this species is probably one of the rarer flies of the family.

In concluding, it is surprising that more species of the genus *Pegomya* have not yet been found. Of the two species so far found, *P. nigratarsis* is by far the most common.

Fanniidae

Fanniidae discovered include species that are often extremely numerous in the valley. *Fannia canicularis*, *F. scalaris*, *F. monilis*, *F. postica* and *F. coracina* have been regularly found in my garden, the latter species having also been bred out, together with *F. vesparia*

from a nest of *Vespula vulgaris* (L) found locally. Many of the other species seem to be extremely common at the margins of woodland while *F. hamata* is often found in more shaded localities where it is one of the most accomplished 'hoverers'. The rarer species of the genus *Fannia* have not so far occurred during the survey, the only exception being *F. aequilineata*, which was bred out from detritus found in the hollowed stump of a horse chestnut. Fonseca (1968) recommends breeding experiments as a method most likely to provide the rarer species of the genus and this record would appear to bear this out.

Muscidae

Perhaps the most notable feature of the muscid records is the presence of so many common species. Very few unusual ones occur and, save for *Alloeostylus sudeticus*, a predominantly northern fly with a single southern record (Somerset – Hinton Charterhouse), they do not appear to have any special distributional significance. Of the less frequently encountered species, *Acanthiptera rohreliformis* has been bred out from a nest of *Vespula vulgaris*, but has only twice been discovered in the field. *Phaonia vittifera* and *Lophosceles mutatus*, flies with a scattered distribution over the British Isles also occur, while *Hydrotaea parva* has been found on *Carex* species at the margin of a pond. Of the genus *Mydaea*, five species are found in woodland, the scarce *M. ancilla* being not infrequent. A Staffordshire record for the uncommon *Graphomyia picta* (Madeley), is given in the transactions of the North Staffordshire Field Club (*op. cit.*). The fly is not infrequent on *Carex* species in marshy areas of the valley.

Conclusions.

In general, it seems probable that the Sandwell Valley, West Bromwich, houses a rich fauna of Diptera Calyptratae and that the list given is by no means complete. As yet, no species belonging to the families Oestridae and Gasterophilidae has been found. This may well be a consequence of the gradual loss of farmland, for although horses for recreational purposes are present in some numbers, the varied livestock that might have supported several species of these specialised flies in the past has almost disappeared. No records exist for Hippoboscidae or Nycteribiidae, but the simple traditional collecting techniques used here were hardly designed to make such captures and co-operation with specialists in other orders will probably yield specimens of these flies in due course. The Diptera collected possess a wide range of different life histories and generally confirm much of the present distribution data as given in the R.E.S. handbooks. Explanations as to why certain sub-families are so poorly represented will have to wait until the remaining fauna and flora of the area have been more fully investigated when the overall picture of insect interrelationships in the district may be more complete.

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65

A NEW COUNTY RECORD FOR CORNWALL,
WITH OBSERVATIONS ON OTHER NOTABLE
MACROLEPIDOPTERA IN THE COUNTY

By M. HADLEY*

I was fortunate enough, in the company of Mr Mark Parsons to spend two weeks (24 August – 5 September 1981) on vacation in Cornwall. We enjoyed the best of the summer of 1981 with a spell of fine uninterrupted weather which brought to light some species of note to the county.

Ipimorpha retusa Linn., a new county record. This species was found by M. Parsons and J. Gregory at Breney Heath near Bodmin on the 26th August, a single specimen being captured. A follow up visit to the site on the 29th produced another five specimens though most were released due to damage. I would think it likely that this species could be found at other similar sites in the county where *Salix* carr has invaded old mine-workings.

Tholera cespitis D. & S., stated by the *Victoria County History* to be scarce and local. *T. cespitis* has been recorded from only the following localities, Falmouth (1905), Tresco on Scilly (1925), Redruth district (1943-58), Perranporth (recently), Coverack (1976), St. Agnes (1969) and Mullion Cove (1977). Bearing in mind the paucity of records for this species we add the following localities:— Polruan (1) 28.8.81, Porkellis Moor, Wendron (several) 27.8.81 and Breney Heath, Bodmin (1) 29.8.81.

Lithosia quadra Linn. There exists a general body of opinion that this species is now resident on the coast, the VCH recording *quadra* as 'widely distributed but local'. E. H. Wild et al. (1973, *Ent. Rec.* 85: 275-9) records the species from Menabilly as very common, with a nightly average of forty individuals, the best total recorded being seventy-two in one night. I was not therefore surprised to record five *quadra* at light at Polruan, just a few miles from Menabilly, four on the 28 August and one taken on the 1 September.

Pterapherapteryx sexalata Retzius seems from its recorded history to be a very elusive insect in the county with only three localities cited by R. Heckford. The VCH states a specimen was taken in 1905 close to Liskeard, F. Smith records the species from Perranporth (1962 and 1967), and John Gregory from Par (1978). The species was recorded from Breney Heath on 26.8.81 and 29.8.81.

Other species of note observed during the holiday were *Anarta myrtilli* Linn., recorded from Porkellis Moor, the larvae being swept from the top of heather on the 27 August, *Eupithecia phoeniciata* Rambur., taken twice at Polruan and suspected of breeding locally; specimens were taken on 26.8.81 and 29.8.81. The rather rare and local *Stilbia anomala* Haworth, and *Xestia castanea* Esp., were also recorded from Breney on 29.8.81.

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I should like to thank Mrs S Turk of the University of Exeter; Cornish Biological Records Centre for access to considerable amounts of data on Cornish Lepidoptera and equal quantities of hospitality.

My thanks are also due to Dr F Smith who gave me helpful advice, and to R Heckford who made available written notes on several of the species noted in this article and from which I have freely drawn information.

I also take this opportunity of acknowledging the financial support from the Nature Conservancy Council in making these trips possible.

THE SCARCE MERVEILLE-DU-JOUR: *MOMA ALPIUM* OSBECK AT ORLESTONE FOREST. — On 30 June 1981, I visited the Kent Trust Reserve (compartment 11) in Longrope Wood to discuss future management of the reserve with the Conservation Officer and two other members of the Trust. When we stopped in the middle of this block of oak woodland I just happened to look at the trunk of the oak tree next to me, and there, just above eye-height, was a freshly emerged *Moma alpium*. After admiring it, we made a point of having a good look at the trunk of every oak we passed after that, but found no more moths. I was, however, able to find the original moth again that evening to take some photographs of it; not easy at 6 feet up a tree trunk! No *alpina* appeared at two mv lights or a couple of dozen sugar patches in the wood that night, not even the one we knew was there, which had dropped like a stone into the undergrowth when I disturbed it, in an attempt to get it into a better position for photographing it. I see from the Forestry Commission permit holders' records that Messrs. R. F. Eley and R. Fairclough recorded this species at Orlestone in 1979. — M. ENFIELD, New Cottage, Warren Farm, Boughton Aluph, Ashford, Kent.

COLEOPHORA POTENTILLAE ELISHA (LEP.: COLEOPHORIDAE) — SOME OBSERVATIONS. — Having collected a number of cases of what I had assumed to be *Coleophora violacea* Strom from birch in Havant Thicket, Hampshire, in the autumn of 1980, I was not a little astonished to find that the moths which emerged in May 1981 were practically all *C. potentillae*, only one of them being *violacea*. In October 1981 Col. D. H. Sterling and Mr. P. H. Sterling, collecting in the same locality, noted that cases of *potentillae* were particularly common on *Potentilla erecta*, and also feeding on *Betula* and *Salix atrocinerea* seedlings growing among the *Potentilla*. I think this is the first record of *potentillae* found on a foodplant other than *Rosaceae*.

In September 1981 Messrs. E. C. Pelham-Clinton, R. J. Heckford and I were collecting near Crackington Haven in Cornwall, and found *potentillae* to be extremely abundant. The cases were most common on *Prunus spinosa*, but also found on *Crataegus monogyna*, *Rubus fruticosus* and *Potentilla erecta*. — J. R. LANGMAID, 38, Cumberland Court, Festing Road, Southsea, Hants.

WHAT AILS ADONIS?

A. C. MORTON*

In common with several other species, the Adonis Blue butterfly *Lysandra bellargus* Rott. has experienced a decline in recent years. Ecological studies which are in progress (Dr. Jeremy Thomas, personal communication) may suggest reasons for this decline and, hopefully, allow effective conservation measures to be taken. As part of a wider conservation effort (Morton, in press *Biological Conservation*) *L. bellargus* has also featured in laboratory studies. In 1981, these studies suggested a fascinating aspect of the ecology of *L. bellargus* which deserves further investigation.

Lysandra bellargus and *L. coridon* Poda are often cited as examples of insects whose distributions are limited by that of their larval foodplant. However, both species may be absent from sites where this plant, *Hippocrepis comosa* L., is quite abundant. Moreover, although some sites support sizeable populations of both species, *L. bellargus* is frequently absent from sites which are suitable for *L. coridon*. Although this may be as a result of competitive exclusion, there are no data with which to support this view. Perhaps a more likely explanation is that *L. coridon* has ecological requirements which are more easily met than those of *L. bellargus*.

Both *bellargus* and *coridon* may be reared on artificial diets (Morton, 1981). During 1981 a group of *bellargus* larvae failed on one particular batch of diet, although this same batch was accepted by *coridon*. It was noted that this batch contained *Hippocrepis* leaf powder, from plants collected at a site which supports only *coridon*. Could it be that the diet failed because it contained plant material which was toxic to *bellargus*? Based on this chance observation, I would like to suggest the following hypothesis, which will be tested experimentally in 1982.

Many legumes are cyanogenic and there is direct evidence that cyanogenesis in *Lotus corniculatus* L. and *Trifolium repens* L. does have a protective function against herbivores, especially snails and slugs (Jones, 1962; Ellis *et al.*, 1977a, 1977c). The chemistry of cyanogenesis is reasonably well understood (Conn, 1973; Seigler, 1975) and the genetic basis of the character in the two plants mentioned above has been discussed by Nass (1972) and by Jones (1977). Moreover, phenotypic expression of cyanogenesis may depend on temperature in some individuals (Ellis *et al.*, 1977b). Reduced expression of the cyanoglucoside under cold conditions would not be deleterious since molluscs are notably inactive at low temperatures (Crawford-Sidebotham, 1972). However, in the absence of selective grazing the cyanogenic forms are probably at a disadvantage to the acyanogenic plants, due to their increased metabolic demands.

Compared to molluscs, lycaenid larvae are probably fairly insignificant herbivores. By fortunate mutation some, such as *Polyommatus icarus* Rott., synthesize the enzyme rhodanese (Parsons &

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Rothschild, 1964) and can detoxify the foodplant. By doing so, they are able to exploit a food resource which is not accessible to animals lacking rhodanese, and thus experience reduced competition.

Given the above facts, one only has to assume that (a) *Hippocrepis comosa* is like other legumes and is polymorphic for cyanogenesis, (b) *coridon* larvae possess rhodanese and can detoxify these plants, and (c) *bellargus* larvae lack this enzyme, to produce a plausible hypothesis for *bellargus* having a more restricted range than *coridon*. Thus, *coridon* can exist on sites where the plants are toxic or non-toxic, whereas *bellargus* would be restricted to the latter.

In the absence of experimental tests of this hypothesis, we can only judge its plausibility by testing its predictions against field observations. In addition to the basic differences in distribution, there are some other predictions:

- 1) Production of rhodanese would be metabolically expensive so *coridon* should have a longer larval stage than *bellargus* due to reduced feeding efficiency.
- 2) *coridon* adults dispersing from their home sites are likely to have equal reproductive success whether the new sites they reach have toxic or non-toxic plants. For *bellargus*, however, such new sites may be unsuitable since most plants may be cyanogenic. We would therefore expect *coridon* to have higher dispersal rates than *bellargus*.
- 3) Maximum expression of cyanogenic phenotype might be expected between April and June, the period of maximum grazing by molluscs. *L. bellargus* would be able to exploit 'cyanogenic' plants by avoiding this time; i.e. feeding before April and after June. However, *coridon* may have to partly compensate for a longer larval stage by feeding at higher temperatures.

While these phenomena may be explained in many other ways, it is at least of some interest that the field observations are not contrary to the independent predictions of the hypothesis. However, even if the basic idea proves sound, the true situation is likely to be more complicated. For example, *bellargus* may possess rhodanese but a form of the enzyme which is effective only at different temperatures from the form which may be found in *coridon*. Or the effect may be due to an entirely different complex of toxic plant materials.

If readers agree that the idea is plausible, they could provide valuable assistance with the experiments this season. Initially, there is a need to screen plants in *coridon* and *bellargus* sites for production of cyanide. If anyone would be prepared to provide samples of plants for analysis, I would be most grateful if they would contact me.

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THE DINGY SKIPPER: ERYNNIS TAGES L. AB. RADIATA BROWN IN DORSET. — On the 17th June 1979, at my school, Milton Abbey, Dorset, I took a short series of *E. tages*, one of which was a variety, although I did not know its name. However, in December 1981, Mr. John Swiner kindly lent me some back issues of the *Record* to browse through. In the October 1970 issue, plate XV, p.253, there is a photograph and description by A. D. R. Brown of *E. tages* ab. *radiata*. I instantly recognised this specimen as being almost identical to my own which is ♂, and although a little worn is still very distinctive. Mr. Brown (*loc. cit.*) states that he knows of the existence of only two ab. *radiata* (his own included), so it is pleasing to be able to record a third example. — R. D. G. BARRINGTON, Old College Arms, Stour Row, near Shaftesbury, Dorset SP7 0QF.

CORRECTIONS. — In vol. 93, p. 197, line 5 up, for *monsticta* read *monosticta*; line 3 up, for *discupuncta* read *discipuncta*, for *Area* read *Aroa*; line 2 up, for *Nemerophanes* read *Hemerophanes*, for *N. enos* read *H. enos*. — D. G. SEVASTOPULO.

THREE SPECIES OF *LEUCOPIS* MEIGEN (DIPTERA: CHAMAEMYIIDAE) NEW TO BRITAIN

By Dr. I. F. G. McLEAN*

The Chamaemyiidae is a family of acalyptrate Diptera with 25 species recorded from Britain (Kloet and Hinks, 1976), whose known larvae are predators of Homoptera. Typically, the adults are small (less than 4 mm long) with distinctive silver-grey dusted bodies, and many species have paired black spots on the abdominal tergites. The adults may be collected by sweeping plants infested with their larval prey, or by rearing from larvae found in association with aphids, adelgids or scale insects (McLean, 1978). Keys to the British species are given by Smith (1963) and Collin (1966). Recent collecting by the author and examination of museum collections has resulted in the discovery of additional species in the genus *Leucopis* Meigen, three of which are dealt with here. Revised keys are not given at this time pending the addition of further species, but consulting the references cited will enable these three species to be identified with the exception of *Leucopis geniculata*, for which distinguishing characters are given in the text.

Leucopis (Leucopis) argenticollis Zetterstedt. The identity of this species has been established by McAlpine and Tanasijtshuk (1972), who give a detailed description with figures of both sexes. They record the larvae as being predators of Adelgidae (Conifer Woolly Aphids), especially of *Pineus* species on Pines.

MATERIAL EXAMINED: SUFFOLK, Wangford Warren (SNT reserve) 20. VIII. 1977, 1 ♀ swept from *Pinus sylvestris* L. leg. I. F. G. McLean (lacks antennae).

Leucopis geniculata Zetterstedt. I am indebted to Dr. J. F. McAlpine (Ottawa) for kindly identifying a British pair (from East Wretham) of this species, and for giving me a copy of his notes on the holotype female in the Zetterstedt collection, University Zoological Museum, Lund, Sweden, which he made in April 1966. This species may be separated from other British *Leucopis* which possess a pair of strong pre-scutellar acrostichals by the broad frons (about half total head width) and usually by the presence of 4-6 outstanding postsutural dorsocentral bristles. *Leucopis (Lipoleucopis) praecox* de Meijere also has these characters, but in this species the costa ends at vein $R_4 + 5$ while in *L. geniculata* it continues to vein $M_1 + 2$. *L. geniculata* also lacks a proscutellum (see McAlpine, 1960) and all these similarities, together with similarities in the structure of the male genitalia seem to indicate a close relationship to *L. praecox*. However, the subgeneric position of *L. geniculata* has not yet been definitely established. It is probably a larval predator of Adelgidae as adults have been swept from foliage of *Pinus sylvestris* infested with *Pineus pini* Macquart.

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MATERIAL EXAMINED: ABERDEENSHIRE, Glen Tanar 31.V.1980, 5 ♀ swept from *Pinus sylvestris* leg. I. F. G. McLean; DUMBARTONSHIRE, Bonhill ? date 31.III.1906, 1 ♀ leg. J. R. Malloch, in RSM; NORFOLK, University of East Anglia, Norwich 1.VI.1977, 3 ♀; Kilverston, Thetford 17.V.1978, 2 ♀; East Wretham (NNT reserve) 20.V.1978, 7 ♂ and 13 ♀; 28.V.1978 4 ♀, all swept from *Pinus sylvestris* and leg. I. F. G. McLean; SUFFOLK, Barton Mills 11.V.1938, 1 ♂; 17.V.1938, 1 ♀; 15.IV.1961, 1 ♂; Worlington 12.V.1944, 1 ♂; 9.IV.1945, 4 ♂ (1 lacks head) and 2 ♀; 29.IV.1947, 2 ♀; 7.V.1947, 2 ♀; 29.IV.1949, 1 ♂, all leg. J. E. Collin, in HEC; Tuddenham NNR 17.V.1978, 6 ♀ swept from *Pinus sylvestris* leg. I. F. G. McLean; Lakenheath Warren 25.V.1980, swept from *Pinus sylvestris* 3 ♀ leg. I. F. G. McLean and 1 ♀ leg. P. J. Chandler; SURREY, Oxshott Heath 4.VI.1977, 1 ♀ swept from *Pinus sylvestris* leg. I. F. G. McLean.

Leucopis (Neoleucopis) orbiseta McAlpine. This species was described by Dr. McAlpine, in his 1971 world revision of the subgenus *Neoleucopis*, from six specimens from Finland, and he has kindly confirmed the identity of two males and one female from Britain (East Wretham). Like the two species discussed above, *L. orbiseta* would appear to be a larval predator of Adelgidae. It is not clear whether the pair from Cheshire collected by Britten were reared from *Pineus strobi* Hartig, or if they were collected as adults from trees infested with this woolly aphid (there are no puparia preserved with the specimens).

MATERIAL EXAMINED: CHESHIRE, Delamere 28.VIII.1924, 1 ♀; 29.VIII.1924, 1 ♂ (lacks genitalia) both labelled "on *Pineus strobi*" leg. H. Britten, in Verrall-Collin coll. HEC; NORFOLK, East Wretham (NNT reserve) 20.V.1978, 1 ♀ swept from *Pinus sylvestris* leg. I. F. G. McLean; 28.V.1978, swept from *Pinus sylvestris* 23 ♂ and 8 ♀ leg. I. F. G. McLean and 1 ♀ leg. Miss C. Brown; Holme Dunes (NNT reserve) 8.VII.1978, 1 ♀ swept from *Pinus nigra* var. *maritima* (Ait.) Melville leg. J. W. Ismay; SUFFOLK, Barton Mills 29.VIII.1939, 1 ♂; 25.VII.1941, 1 ♂, both leg. J. E. Collin, in HEC; Wangford Warren (SNT reserve) 20.VIII.1977, 2 ♀ swept from *Pinus sylvestris* leg. I. F. G. McLean.

ABBREVIATIONS USED: HEC — Hope Entomological Collections, RSM — Royal Scottish Museum NNT — Norfolk Naturalists' Trust, SNT — Suffolk Naturalists' Trust.

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It is a pleasure to thank Dr. J. F. McAlpine (Ottawa, Canada) for all his help with my studies of Chamaemyiidae. I thank Dr. M. W. R. de V. Graham (HEC, Oxford) and E. C. Pelham-Clinton (RSM, Edinburgh) for allowing me to examine the collections in their charge, the Norfolk Naturalists' Trust for permission to record insects from their reserves, the Suffolk Naturalists' Trust for permission to record insects at Wangford Warren, and Dr. J. W. Ismay (Port Moresby, Papua New Guinea) for collecting Chamaemyiidae in Britain and for advice and encouragement in many ways.

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PIERIS RAPAE L. AND CARDARIA DRABA [CRUCIFERAE]
 AS A LARVAL FOODPLANT. — This plant, commonly known as Thanet Cress, a native of S. and C. Europe and Western Asia, was introduced into Britain in 1809, and is now a common plant of roadsides and waste land in N. Kent, especially near the Thames estuary, forming dense clumps with conspicuous masses of white flowers in May and June. On a number of occasions I have observed females of the vernal brood of *P. rapae* laying eggs upon this plant, as at Crayford on June 13th, 1981. In 1979 butterflies were reared from such eggs found at Greenhithe, the larvae being given only Thanet Cress.

On August 12th, 1981, on some waste land close to Dartford Heath, I watched two female *P. rapae* flying purposefully over the tall grasses and at intervals disappear amongst them. Investigation showed that they were seeking somewhat deteriorated plants of Thanet Cress, largely hidden from view, upon which to lay eggs.

It appears that *C. draba*, at least in N. W. Kent, is a significant larval foodplant for both broods of *P. rapae*, although I cannot find reference to *C. draba* as a pabulum for this insect in the textbooks and journals.

A further observation made at Crayford on June 13th, 1981, was that many male *P. brassicae* L. were present and appeared to settle frequently amongst the considerable masses of Thanet Cress. However, this was illusory, for close inspection revealed that they were seeking isolated plants, largely hidden, of common vetch, *Vicia sativa*, upon which to feed. — B. K. WEST, 36 Briar Road, Bexley, Kent.

Bernard Sinclair Goodban

Bernard Goodban died suddenly on 18th December 1981 at the age of 80, he having been born on 11th June 1901. His interest in the macrolepidoptera was lifelong and while general in earlier years, he later concentrated entirely on the Geometridae (excepting the "pugs").

He will be remembered by many as co-discoverer in this country in 1956, of *Xanthorhoe birviata* Borkhausen (Balsam Carpet). He also took an active part in the investigation into the Lepidoptera of the Ruislip District in the 1950s, which included hundreds of records of the forms of *Biston betularia* L., which were valued by Dr. Kettlewell in his work on melanism. Always keen on rearing moths, especially varieties, he was involved in the establishment of the genetic basis of ab. *brunneata* Cockayne of *Ennomos autumnaria* Werneburg.

A modest and kindly man ever willing to help anyone, he will be greatly missed by his many friends. It is understood that his collection of Geometridae will go to the British Entomological and Natural Society. — W. E. MINNION.

William Ernest Collinson F.C.I.S., F.R.E.S.

Bill Collinson, was born in Mumbles, South Wales on the 21st January 1920, and died at his home in Ringwood, Hants on the 22nd December 1980, after a long illness which he bore with great fortitude.

A keen naturalist from an early age, Bill gave many Natural History lectures, and in 1971 appeared on television in a programme on conservation. His real love, however, were the lepidoptera, and main speciality the Northern Eggar: *Lasiocampa quercus* ssp. *callunae* Palmer, about which he wrote a paper dealing with its many aberrations. This paper on the "Black Eggar" appeared in the *Proceedings of the Yorkshire Naturalist* for 1956. He also wrote numerous articles in the *Bulletin of the Amateur Entomological Society*. But, without doubt, his principal contribution to entomology is *The Butterflies and Moths of Halifax and District* (1970), an annotated list of 334 macrolepidoptera recorded since 1832 in the old parish and district of Halifax.

Bill formed an extensive collection the greater part of which he bequeathed to his son D. P. Collinson of Liss, including a remarkable aberration of *Drymonia ruficornis* Hufn. (cf. *Proc. Brit. ent. nat. Hist. Soc.*, 1974: 7(1) pl. I, fig. 9); but the cabinet with the butterflies and moths mentioned in his Halifax List has been given to the Halifax Scientific Society and Museum.

No words can express the real feeling of personal loss felt by his many friends who knew and loved him, and our sympathy is extended to his widow, to his son and daughter and to his grandchildren. — ROBERT AND AMANDA WATSON.

John Venour Gane

John Gane was born in Bridlington, Yorkshire on 19th July 1907, and died on 27th January 1981. His parents had a boys' preparatory school at Marton Hall, near Bridlington, and it was from them that he drew his broad interest in Natural History as part of his daily instruction, and in 1937 succeeded his father there as head-master.

His main interest was in the macrolepidoptera of Norfolk, and in particular those of the Broads. He was also the younger brother of C. W. G. Gane who had a locality in Norfolk for *Catocala fraxini* L., where it appears to have been resident and was taken in numbers in 1933 and 1934.

John was very meticulous in his recording, writing up full lists of species and numbers on every occasion. He corresponded with and met many of the Norfolk people, and it was with their help that between 1970 and 1980 he compiled a list of the lepidoptera of Norfolk. This list, which was almost completed at the time of his death, was never published and is at present in the hands of the writer as are his Notebooks, Card Index and Collection.

Much of his collecting was done with light, but unenamoured with the design of the Robinson Trap, he produced a light trap to his own specification by commissioning a joiner to build a double-walled folding wooden carcass, canvas-lined to give the moths purchase. He redesigned the collar out of solid perspex, lengthened the funnel to eighteen inches, and enclosed the bulb inside a perspex cover. This ambitious construction was situated on the roof of his garage within a stone's throw of Barton Broad, where among many interesting species he took *Orgyia recens* Hbn. (bred 25.5.1973 from larvae found on meadowspet) and *Eilema pygmaeola pygmaeola* Dbldy.

John was a quiet and thorough collector always willing to share his extensive knowledge, and will be greatly missed by all who knew him. — MARK HADLEY.

Notes and Observations

A VERY FINE EXHIBITION. — I am getting old and can no longer chase *Colias croceus* in August over clover fields. But in October 1981, I was pursuing certain ecclesiastical quarries, and my wife and I spent ten days in Verona in Northern Italy. What a lucky choice it was, for there in the heart of the City in the Palazzo Gran Guardia was this exhibition of farfalle (butterflies) of the world.

The Catalogue is obtainable from the Museo Civico di Storia Naturale at Verona, and contains some 70 pages with colour pictures and diagrams. We are told on p. 69 that the collection of butterflies together with that of Coleoptera and Hemiptera comprises the most important collection in the Verona Museum. There are over one million in number with some 50000 butterflies. This they say is one of the most important collections in Italy, most of the insects coming from Piemonte and Veneto with some from Kenya and Brazil.

On p.66 it is interesting to read that the following are among the species that have become extinct in the region: *Araschnia levana*, *Euphydryas aurinia* and *Thecla betulae*. I was fascinated by the diagrams of insect flight which record the variety of flight which we old bug hunters know so well; but alas, this does not appear in the Catalogue, for it is something I have not seen recorded before. There is the personal note too, in photographs of Carlo Recchia and Rosetto Gioco at work in their laboratories.

But what interested me more than almost anything were the pre-Linnean species on show. I did not know there were any. But there it was — *Papilio canaria* in a 1750 (?) collection for what we know as *Gonepteryx rhamni*. A brown, labelled 'occulata'. A pre-Linnean fritillary labelled 'aglaia'. And of moths, dear old *S. convolvuli*. I'm working hard with a dictionary. What happy fortune brought me to Verona. — Rev. Canon P. C. HAWKER, St. Botolph's Vicarage, 84 Little Bargate Street, Lincoln LN5 8JL.

A SOUTH AMERICAN SYNTOMID IN CAMBRIDGE. — In October 1981 my wife was given a 'nasty black stinging fly' by our local greengrocer in Chesterton, Cambridge. It had apparently suddenly appeared and alarmed the customers. The specimen, which was in excellent condition, appeared to be freshly emerged and was a male of *Ceramides vividis* Druce. This is a reasonably common South American syntomid whose larvae are recorded as being a minor pest of banana trees, with whose fruit it was almost certainly imported. I have seen many things from our local shops, mostly beetles, but also cockroaches, spiders and once a tree frog. This however is the first Lepidopteran. I hope for others. — B. O. C. GARDINER, University of Cambridge, Department of Zoology, Downing Street, Cambridge.

MR. J. RAE AND HIS RECORDS, AND A NOTE ON MR. WILLIAM REID OF PITCAPLE. — Whilst recently browsing through Prof. Trail's 1878 list of the "Lepidoptera of Dee" (*Trans. nat. Hist. Soc. Aberdeen*, 1878: 28-42), I noted that the extremely puzzling and unlikely record of *Argynnis paphia* at Muchalls, Kincardineshire was due to Mr J. Rae. Idly moving on to another unlikely record, that of *Erebia medea (blandina)* (=aethiops) on the coast at Nigg, Kincardineshire I again found Mr. Rae's authority used. Now roused I searched the list and noted all Mr. Rae's records. They are few but choice!

As well as the two noted above he lists *Zygaena trifolii* between Muchalls and Stonehaven, *Liparis auriflua* (=Eproctis similis) at Aberdeen and *Botys verticalis* (=Pleuroptya ruralis) at Shetlocksley, Aberdeen. Now the last is still found rarely, scattered throughout lowland Aberdeenshire, but the others are very peculiar. Indeed some authors have had to devote considerable, fruitless time and space to accounting for them in their biogeographical speculation. It seems to me that a strong circumstantial case can be made for regarding Mr. Rae as, shall we just say, unreliable, and my advice would be for people to allow his records to vanish gracefully.

Having impugned one reputation may I resurrect another. P. B. M. Allan, whose writing I admire and enjoy greatly, discusses

Eumichtis (= *Blepharita*) *satura* in "A Moth Hunter's Gossip" (1947), and suggests most amusingly that William Reid from Pitcaple, Aberdeenshire cleverly beat up a lucrative trade in the moth by discussing its larval habits. All very possible, but firstly Reid was not a dealer, as Allan suggests, and secondly all his writings, and especially his learned and comprehensive "List of the Lepidoptera of Aberdeenshire and Kincardineshire" (1893) are redolent of integrity. He was a microlepidopterist of real skill, and we are still rediscovering many of the species which he listed and which to us seemed rare and perhaps unlikely. If you read his works I am sure you will conclude, with me, that far from being a canny dealer he was actually a learned and reliable field lepidopterist. I would like him to be revered, not villified! — M. R. YOUNG, Department of Zoology, Aberdeen University, Tillydrone Avenue, Aberdeen.

DANAUS PLEXIPPUS L. IN THE ALGARVE, PORTUGAL, 1981. — The reports of this butterfly in South-West England in the first four pages of the November/December 1981 "Record" make my own experience worth recording in a journal primarily concerned with British entomology.

We holidayed at the Montechoro Hotel just outside Albufeira in the Algarve from 2nd to 16th October. For the first few days the weather was mixed and worsening with a wind from the South-West which is unusual in this part of Portugal. There were few butterflies about but I was struck by the plentiful supply of Lantana bushes in the hotel and neighbouring gardens and these reminded me of Teneriffe where they are so well patronised by the Monarchs.

When the wind changed back to the North we were blessed with settled weather and very warm sunshine and almost immediately *D. plexippus* appeared gliding round the swimming pool on the 9th, it was seen on most days during the ensuing week, usually on or near the Lantana. Knowing nothing of the events in England and hoping that specimens from the Canaries might be settling in the Algarve I made no attempt to catch it though nothing could have been easier as it rested on the flowers and was obviously in very good condition.

I am not aware whether it is possible to distinguish a specimen from the Canary Islands from one from America, but in view of the shorter distance and favourable wind this seems the more likely source for the Algarve specimen and does not seem so unlikely for the Cornish specimens. It would be interesting to know how many more Monarchs were seen along the Western sea-board of Europe at this time. — C. I. RUTHERFORD, Longridge, Macclesfield Road, Alderley Edge, Cheshire, SK9 7BL.

INTERESTING MOTHS AT MV LIGHT AT OR NEAR WYE, KENT IN 1981. — This year, I ran Robinson traps continuously at Wye College from May to August, and in my garden on the downs above Boughton Aluph intermittently throughout the year. May and most of June produced very low numbers of both species and individuals, but the situation improved in July and August. The more interesting species trapped were:—

Rhyacia simulans Hufn., at Wye on 29 July, now recorded for

the fourth year running in Kent, after its first capture in the county in 1978. The date is interesting, since the adults are supposed to aestivate from mid July to mid August. *Diarsia dahlii* Hbn. Boughton Aluph, 25 August; the first record for the area for 12 years. *Arenostola phragmitidis* Hbn., one at each site on 7 August; the appearance of two fresh specimens on the same night some distance from any possible breeding ground suggests a possible dispersal flight that night. *Hadena confusa* Hufn., Boughton Aluph, 2 July, the first record here in five years. *Evergestis extimalis* Scop., Boughton Aluph, 25 August. — M. ENFIELD, New Cottage, Warren Farm, Boughton Aluph, Ashford, Kent.

ANOTHER FOODPLANT OF THE YELLOW SHELL: CAMPTOGRAMMA BILINEATA L. — Publication of the recent note on the larval foodplants of *C. bilineata* (West, *Ent. Rec. J. Var.*, 93, 198, 1981) happened to coincide with a re-examination of the note-books kept by myself and my brother (S. A. Knill-Jones) between 1955 and 1962. The entry for 17.4.1957 includes a note to the effect that night-searching for larvae at Freshwater, Isle of Wight (OS.SZ. 3387) revealed one stout green larva with a dark dorsal line, whitish lateral line and brown head, on *Ranunculus ficaria* L. (Ranunculaceae). The resulting imago emerged on 22.6.1957. There is no note that feeding was actually observed, but this would not be expected as the note-books rarely contained such observations unless the originally recorded foodplant was found to be unacceptable. The brief larval description is consistent with that given in Stokoe and Stovin, *Caterpillars of British Moths*, (F. Warne, London, 1948) and the note makes it highly likely that *R. ficaria* is a foodplant for the post-hibernation larvae of *C. bilineata* in the wild. — R. P. KNILL-JONES, 9 Crown Road South, Glasgow, Scotland

FURTHER RECORDS OF MONOCHROA HORNIGI (STAUD.) — I recently had cause to re-examine and dissect some *Monochroa* spp. This led to the discovery that I had taken *M. hornigi* at Enfield, Middx., 14.vii.1979 and at Southampton, 17 & 19.vi.1970.

The latter specimens had previously been misidentified as *M. elongella* (Hein.) and are so-recorded in Goater's list of Hampshire lepidoptera. I did find, however, that I have a specimen of *elongella* from Braunton Burrows, North Devon, 26.viii.1970, which was correctly identified. This is a scarce and local species whose larva feeds on *Potentilla anserina*. — D. J. L. AGASSIZ, The Vicarage, 10, High View Avenue, Grays, Essex RM17 6RU.

THE RISE OF THE CYPRUS PUG: EUPITHECIA PHOENICEATA RAMBUR IN THE EASTBOURNE AREA. — This moth has been spreading along the south coast and was first noted in Eastbourne on 27 August 1978 at light in my old garden. In 1979, two were noted: one by Mr. M. Hadley and one by Mr. S. W. P. Pooles. In 1980, a further eight specimens were captured, including one netted near the cliffs at Holywell by Mr. C. Pratt. In 1981, fewer traps were run in the area; however, the moth was noted in increased numbers with a total of 15, including one interesting record of it from Deep Deane which is some way from a larval foodplant. — M. PARSONS, The Forge, Russells Green, Ninefield, Battle, E. Sussex.

NOTES ON SOME BRITISH CURCULIO SPP. (COL.). — The occurrence of the rather scarce and pretty little *Curculio rubidus* Gyll. in the eastern suburbs of London during the present century seems not to be well established up to now. Fowler (1891, *Col. Brit. Isl.*, 5: 386) cites Forest Hill and a statement by Champion that it is "not uncommon in the London district"; but it is clear from what follows that this latter refers to places in Surrey well outside the metropolis, and in any case all these are 19th-century records. Moreover, the species is not included at all in the Victoria County History list of Coleoptera of Kent (Fowler, 1908). There is, however, a record for Shooters Hill and Lee (in this district) by W. West, in 'Woolwich Surveys' (1909) — the only one for Kent that I have seen, although *C. rubidus* is not really rare in the county. In the eastern division I have met with it once or twice singly in Ham Street Woods; in the western, at Darenth Wood likewise — on the last occasion there, 7.ix.63, one each of the present species and *C. betulae* Steph. were taken off birch in the same sweep of the net. In the year after moving to Charlton (1974) I was pleased to come across a few examples of *rubidus* by sweeping under trees on two of the grassy slopes in Maryon Wilson Park there, in August; I have seen none since, but have made no special search. One was at a little distance from a birch, while two others were near oak, ash, and black poplar. This is not far from Shooters Hill where West took it long ago, and where I have collected on many occasions but have found, so far, only the more common oak-feeding species *C. venosus* Grav., *glandium* Marsh., and *pyrrhoceras* Marsh.

C. betulae, supposedly scarcer than *rubidus*, seems also to be little known in Kent; the VCH list gives only Plumstead (S. Stevens), but I have taken it two or three times singly at Darenth and Ham Street Woods, and its actual range and incidence in the county appears very similar to that of its close ally. The late Dr. A. M. Masee once told me that *betulae* could best be found high up on the outer shoots of fairly young birches.

The polyphagy attributed to this species is somewhat remarkable. As a larval pabulum, the developing fruits or catkins of alder are doubtless not too dissimilar to those of birch, nor are young fruits of sloe to those of cherry; but *between* these two pairs of development-media the difference is surely considerable. Hansen (1965, *Danm. Faun.* 69: 318) gives all four as hosts but alder as the principal one in Denmark — birch being exceptional, whereas in Britain it is by far the most usual (as with *C. rubidus*). And that is not all: Reitter (1916, *Faun. Germ.*, 5: 189) adds *Quercus* and *Salix cinerea* (the latter also for *rubidus*)! His inclusion of willow is of interest in lending some plausibility to my tentative association of both species at times with *Populus* (Allen, 1947, *Ent. mon. Mag.*, 83: 127, and see above under *C. rubidus*); compare further the common little black *C. pyrrhoceras* which seems to fluctuate in its host-choice between oak and willow, again geographically; e.g. the former in Britain, the latter in Denmark. Possibly, however, confusion with the very similar *C. salicivorus* Payk. may sometimes have occurred. In any case polyphagy is much less surprising with

these smaller species of the genus (s. *Balanobius* Jekel) whose larvae develop in leaf-galls as opposed to fruits.

In contrast, the larger species of *Curculio* are virtually monophagous; where a secondary host is alleged to exist it is probably based on adult straying, as when oak and hazel, for instance, grow close together. It is noteworthy that a middle-sized oak-feeding species, *villosus* F., develops in the familiar 'oak-apple' galls, and not in acorns like *venosus* and *glandium* — a fact not, I think, noticed in British works. Biologically, therefore, it belongs with the *Balanobius* group, whilst in other respects a typical *Curculio* s. str. (= *Balaninus*). I should perhaps mention in passing that the very distinctive *C. (Balanobius) crux* F., which lives on *Salix*, is common on much of the Continent and would be expected to occur in Britain.

I cannot agree with Fowler's estimate (*l.c.sup.* 385) that *C. glandium* (= *turbatus* Gyll.) is 'not common'; I have always found it at least as commonly as *C. venosus*, if not more so. The two often occur together on the same oaks, and I have had *glandium* on the tray in plenty off one tree at Windsor, accompanied by a few *venosus*. The former is notable also for its great variation in size, some specimens being but little larger than *betulae* which they rather resemble. On the other hand *nucum* L. and *venosus*, from what I have seen, vary hardly at all in that regard. All three of these larger species are, normally, easy to discriminate in the field, each having its own characteristic facies not readily described.

I have taken all eight British species of *Curculio* at Darenth Wood, W. Kent, which classic locality is now sorely in need of protection. — A. A. ALLEN.

EULYPE HASTATA L: ARGENT AND SABLE FEEDING AT BLUEBELLS (ENDYMION NONSCRIPTUS). — R. South in his *Moths of the British Isles*, Vol. II states of this moth — "It flies in the afternoon sunshine around and over birch trees, and occasionally alights on the leaves", and my experience of the insect in Southern England is in accord with this description. However, on May 25th, 1952, at Broadwater Forest, Sussex, later to be despoiled by the Forestry Commission, I saw about a dozen specimens most of which were feeding at bluebells far past their prime. Aphides were not in evidence on the flowers, and I suspect the moths were imbibing some product caused by bacterial activity rather than upon nectar. I have not observed *E. hastata* feeding at flowers on other occasions, nor have I seen any reference to such behaviour. — B. K. WEST, 36 Briar Road, Bexley, Kent.

AN EARLY RED ADMIRAL. — In warm sunshine this morning, my wife and I watched a *Vanessa atalanta* L. sunning itself by the roadside in Holmesley Enclosure in the New Forest. In view of the recent very cold spell it seems likely that this was one that managed to hibernate. In spite of there being a light SW wind, the insect had none of the urgency of an immigrant about it. — E. H. WILD, 7, Abbots Close, Highcliffe, Christchurch, Dorset, 31.i.1982.



Current Literature

The Smaller Moths of Essex by A. M. Emmet. 158pp., stiff wrapper. Essex Naturalist No. 6. The Essex Field Club, c/o Passmore Edwards Museum, Romford Road, London E15 4LZ. 1981. Price £7 (£5 to Members of the British Entomological and Natural History Society).

Many years have elapsed since publication of W. H. Harwood's classic account of the microlepidoptera of Essex in the *Victoria County History* (1903), so that an up-to-date definitive work on the smaller moths of the county has long been a desideratum. Compiled by one of the foremost British microlepidopterists of this century, the new book adequately fills this need, and is thus a most welcome addition to the county lepidopteras.

Among the subjects treated in an introduction replete with interest are: (1) The recording area; (2) The presentation of the records; (3) Types of habitat; (4) The history of recording in Essex; (5) The principal recorders; (6) Recorders, past and present; and (7) Collections. The main part of the work follows with details of the 1052 species so far recorded, to every one of which is appended a trim little thumbnail-sized distribution map. Despite some abbreviation, presentation on the whole is admirably clear and precise with, among other particulars, the names of localities, years of occurrence, authorities, vice-county and 10km square numbers, and a species' status in the county. *The Smaller Moths of Essex* also includes foodplants, but interest in these would have been far greater were it made clear upon which of these foodplants species have been known to feed in Essex. A valuable feature is the first and last year of known occurrence or year of recording in the county, though a first record cited here is not always the earliest, as reference to Samouelle, *Entomologist's Useful Compendium* (1819) and Wood, *Index Entomologicus* (1839) will show. Less essential in a specialised work of this nature, are over 400 lines in larger type, mostly of general interest only and not strictly relevant to Essex. Further space is taken up by 50 drawings, mainly of representatives of families of microlepidoptera, of which though many are well executed (notably those by E. S. Bradford), there are others so poor as to be quite unrecognisable. The book concludes with an important list of 262 bibliographical references, but is regrettably devoid of any index. There are a fair number of printing errors, mostly trivial however, and in the review copy some of these had already been neatly corrected in the hand of the author.

The above criticisms are far outweighed by the merits of this fine work. Much of it is the outcome of intensive pioneer exploration of the county, undertaken by the author over the past few years, assisted by his wife Katie, and resulting in a remarkably comprehensive and well-researched account. Reasonably priced, especially to B.E.N.H.S. members, we heartily recommend this book to students of the British microlepidoptera and devotees of "local lists". — J.M.C.-H.

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George Thomson, Department of Biology, University of Stirling,
Stirling, FK9 4LA.

WANTED

1982 — YEAR OF THE FORESTER

It has become apparent that we know very little about the precise habitat requirements and finer details of biology of these three species. I should therefore be glad to hear from anyone who knows of recent colonies of any of the three species, namely *Procris geryon*, *P. statices* and *P. globularide* and urge recorders to check any sites where the species occurred in the past. Information gleaned will I hope be presented at the end of the field season and all records received will be fully acknowledged. Records should be submitted to M. Hadley, c/o Nature Conservancy Council, 20 Belgrave Square, London SW1X 8PY.

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CONTENTS

Four New South African Butterflies. C. G. C. DICKSON	41
The Dotted Chestnut: <i>Conistra rubiginosa</i> D. & S. Brig. E. C. L. SIMSON...	45
The Immigration of Lepidoptera to the British Isles in 1980: a Supplementary Note. R. F. BRETHERTON and J. M. CHALMERS-HUNT ...	47
The Early Stages of <i>Parornix finitimella</i> Z. and <i>P. torquillella</i> Z. (Lepidoptera: Gracillariidae). Lt. Col. A. M. EMMET	53
The Wildlife and Countryside Act, 1981. A. E. STUBBS	57
The Diptera (Calyptratae) of the Sandwell Valley. M. G. BLOXHAM ...	60
A New County Record for Cornwall with Observations on Other Notable Macrolepidoptera in the County. M. HADLEY	65
What Ails Adonis? A. C. MORTON	67
Three Species of <i>Leucopis</i> Meigen (Diptera: Chamaemyiidae) New to Britain. Dr. I. F. G. McLEAN	70
Notes and Observations:	
The Beautiful Snout: <i>Bomolocha fontis</i> Thunb. R. G. WARREN ...	44
Larvae of the Yellow Shell feeding on Cruciferae. Dr. D. F. OWEN ...	52
<i>Papilio machaon</i> L.: Swallow Tail flourishing in a N. Norfolk Locality, 1981. A. A. ALLEN	56
The Use of the term 'Pock-Mark' in Entomology. J. M. CHALMERS-HUNT.	59
<i>Coleophora paripennella</i> Z.: a New Foodplant. N. F. HEAL	59
<i>Carpophilus sexpustulatus</i> F. (Col.: Nitidulidae) in Surrey with a Note on its Habits in Britain. D. PRANCE	59
<i>Coleophora potentillae</i> Elisha: Some Observations. Dr. J. R. LANGMAID	66
The Dingy Skipper: <i>Erynnis tages</i> ab. <i>radiata</i> Brown. R. D. G. BARRINGTON	69
<i>Pieris rapae</i> L. and <i>Cardara draba</i> as a larval foodplant B. K. WEST ...	72
A Very Fine Exhibition. Rev. Cannon P. C. HAWKER	75
A South American Syntomid in Cambridge. B. O. C. GARDINER ...	75
Mr. J. Rae and his Records, and a Note on Mr. William Reid of Pitcaple. Dr. M. R. YOUNG	75
<i>Danaus plexippus</i> L. in the Algarve, Portugal, 1981. C. I. RUTHERFORD	76
Interesting Moths at or near Wye, Kent in 1981. M. ENFIELD.. ...	76
Another Foodplant of the Yellow Shell. Dr. R. P. KNILL-JONES ...	77
Further Records of <i>Monochroa hornigi</i> Staud. Rev. D. J. L. AGASSIZ ...	77
The Rise of the Cyprus Pug in the Eastbourne Area. M. PARSONS ...	77
Notes on Some British <i>Curculio</i> Species (Coleoptera). A. A. ALLEN ...	78
<i>Eulype hastata</i> L.: Argent and Sable Feeding at Bluebells B. K. WEST. ...	79
An Early Red Admiral. E. H. WILD	79
Obituaries:	
Bernard Sinclair Goodban	73
William Ernest Collinson	73
John Venour Gane	74
Current Literature	80

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AND JOURNAL OF VARIATION

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THE IMMIGRATION OF LEPIDOPTERA
TO THE BRITISH ISLES IN 1981, INCLUDING THAT
OF THE MONARCH BUTTERFLY:
DANAUS PLEXIPPUS L.

By R. F. BRETHERTON¹ and J. M. CHALMERS-HUNT²

The outstanding invasion of the generally poor season of 1981 was that of *Danaus plexippus* L., which came with many North American birds mainly to south west Britain. Some 120 sightings have been reported and, although numbering of the butterflies concerned is difficult, the influx was probably the largest yet recorded. The records are discussed and set out in detail in Annexe III.

Apart from this, among the scarce immigrant species (Annexe II) the capture in a last fling during the warm week-end of November 20/22 of the tenth known British specimen of the Noctuid *Tathorhynchus exsiccata* Lederer in Cornwall and of an example of the Pyrale *Euchromius ocella* Haw. in Kent are especially notable, as is also the recognition on September 29 in Glamorgan of a single *Cynthia virginiensis* Drury (*Ent. Rec.* 93: 242), which had presumably accompanied the *D. plexippus*. Other good single records are of a *Nymphalis antiopa* L. seen in Surrey on August 15 (*Ent. Rec.* 93: 242), a *Diachrysia orichalcea* F. in West Sussex on August 8, a *Hyles gallii* Rott. observed by day in the Isle of Wight on August 3, and of a *Catocala fraxini* trapped at Lymington, South Hampshire on the night of October 1.

In addition, single larvae of *H. gallii* were found as far apart as Sussex and Yorkshire. Of the two *Nymphalis polychloros* reported (*Ent. Rec.* 93: 237) the first, at Catisfield in Sussex on April 4 may either have over-wintered in Britain or come with other immigrant species about that date; the second, at Whitstable, East Kent, had only slight migratory contemporaries and was perhaps locally bred, either from immigrant or precariously established native stock. *Deltote bankiana* Hbn., which was reported in 1980 as a single immigrant, at Kingsdown, East Kent, now appears to be at least temporarily established nearby (*Ent. Rec.* 93: 204). A single specimen of *Scopula rubiginata* Hufn. taken at Dungeness on August 5 1981 is assumed to have been an immigrant, like the few previous examples recorded from the Kent Coast.

Agrius convolvuli L. alone among the scarcer species did rather better than in 1980. One was seen in Essex in July, one in Lincolnshire in August, and 19 between September 15 and October 5, widely scattered from south Devon to Orkney; but these were mostly single specimens, and no mass immigration appears to have taken place. *Rhodometra sacraria* L. appears to have arrived in three distinct batches. 12 were recorded from September 10 to 20; seven from September 26 to October 4, the last being as far north

¹ Folly Hill, Birtley Green, Bramley; Guildford, Surrey GU5 0LE

² 1 Hardcourts Close, West Wickham, Kent BR4 9LG.

as Warwickshire, and two, both females of ab. *labda* Cramer, on November 21 and 22 at Rogate, Sussex. This form is usually obtained by rearing in warmth in captivity; its presence in the wild, and that of the semi-tropical *T. exsiccata*, in late November shows that this migration must have had a very distant origin. *Mythimna unipuncta* was reported in similar numbers from September 19 to October 5; and one was also present in Cornwall on November 21. These were, however, from four coastal localities only between west Cornwall and south Essex. *M. vitellina* was reported twice in Cornwall in late May but the numbers noted in September and October were very small. Less than ten *Orthonama obstipata* F. were noted, curiously spread at various dates between May 28 and October 5. Of other scarce immigrants there were only two *Spodoptera exigua* Hbn., the second being on November 22, and of *Trichoplusia ni* Hbn. and *Palpita unionalis* Hbn.; and only single records of *Eurois occulta* L., *Mythimna albipuncta* D. & S., *Helicoverpa armigera* Hbn., *Heliothis peltigera* D. & S., *Diachrysia orichalcea* F. A Brimstone butterfly which was observed and captured, but not retained, in a garden at Temple Ewell, Dover on July 28 appears from the careful description to have been an example of *Gonepteryx cleopatra* L. This south European species is not a known migrant, and its presence outside Dover may have been due to introduction in a car or lorry. There have been at least four previous occurrences in Britain between 1870 and 1957.

The total of 23 scarce immigrant species reported in 1981 compares badly with 29 in 1980, itself a poor season; the number of individuals was also very much smaller.

Most of the common immigrants also did badly. Of *Vanessa atalanta* L. one was found hibernating in a heated room in Orkney in February, and five probable immigrants were reported in March and April; but the usual influx in late May and June was small, and no larvae from it were noted though some were found in late August and September. There were, however, considerable immigrations in August and especially in late September, so that numbers may have approached normal in the autumn. The last was seen at Bradwell-on-Sea on October 23.

Of *Cynthia cardui* L. about 120 were reported, in contrast to the abundance of 1980. The earliest singles reported were as far north as St. Bees Head, Cumbria, and Orkney, on May 14; these were followed by a few others, widely spread later in the month, about a dozen in early June and some singles in July. There were apparently several small invasions in August, with penetration inland as far as Warwickshire and Hertfordshire; a few scattered singles in September; and a last record at Beer, South Devon, on October 11. Two full grown larvae and some vacated webs were noted at Muston, south east Yorkshire, on August 10.

Colias crocea Fourc., with some 50 clearly immigrant examples reported, had an interesting year. The first record was not until July 30 at Aylesford Common, South Devon, after which there was a small influx mainly in the south west about the middle of August and in its last days and in early September a larger one, with bigger

numbers seen in Sussex and Kent and a single in Essex. Inland records were of about five, with some *C. cardui*, at Ashridge, Hertfordshire and of one at Tidworth, North Wiltshire on August 17 and 19. The last specimens seen were at Slapton, South Devon, September 21 and 23. In Warwickshire, however, there was an extraordinary occurrence reported by Mr. D. C. G. Brown (*Ent. Rec.* 93: 241). On August 2, 70 examples were counted, including three *f. helice*, in and near old gravel workings, and ten later visits by him and others to the same place brought the total count to over 400: the last singles were on September 6 and 13, and the only one seen elsewhere was within a mile of the main site. Even allowing for considerable recounting on successive visits such numbers must surely reflect local breeding from several parents. Later information obtained from Mr. R. G. Payne reveals the presence of from seven to 12 male *C. crocea*, but no females, during the second week of August in an area south of Duston, 30 miles further east, in Northamptonshire, where a few (not previously reported) were seen at the same time in 1980. The origin of these large, isolated, occurrences is mysterious. There were no records of *C. crocea* anywhere in Britain in May or June 1981, which might have provided parents; no Warwickshire records of it in 1980, the most recent being of two singles on August 5, 1979; and no other reports from Northamptonshire in 1980 or 1981. Overwintering in Britain in any stage has never been proved, and seems very unlikely so far north as these counties.

Among the common moths *Autographa gamma* L. showed a somewhat patchy picture. Apart from a single specimen at Beetham, Westmorland on May 6, arrivals only began in the last ten days and remained much below average in June and most of July; many observers commented on its unwonted scarcity, which continued in most inland areas for the rest of the season. In August and September, however, sizeable sudden influxes were counted at several coastal light traps. In Sussex at Peacehaven, 63 and 66 on August 6 and 27, a total of 30 for the four nights of September 5 to 8 and at East Dean 100 on August 25; at Bradwell-on-Sea, South Essex, 124, 120, 179 on August 13, 14 and 26, and a total of 71 for September 6 to 9. Other traps near the coast, however, as at Chillington, South Devon and Beetham, Westmorland, reported no considerable influxes and "lowest ever" totals for the season. Sudden relative increases in the numbers of *A. gamma* are often useful in checking the arrival points and dates of immigrant swarms which include other, and scarcer, immigrants.

Agrotis ipsilon Hufn. began well with two influxes, widely reported, about March 7 and again in late March and early April; breeding from these may have provided most of the few moths recorded in June and July. Numbers from August to October were clearly lower than usual; but the species put in an appearance during the last immigration of November 20 to 22. No records of it came from places north of Cumbria.

Peridroma saucia Hbn., with about 40 reported from 12 places, was also unusually scarce. The first was at Rogate, West Sussex, on

May 22, followed by two others elsewhere in June, and there were small immigrations, mainly to the south and south east coast from late August into October; eight were trapped at Fountainstown, co. Cork before September 23. The last record was at Hayling Island, South Hampshire on October 21, and the most northerly at Beetham, Westmorland, on October 4. Of the diurnal *Macroglossa stellatarum* L. only eight were reported, from five places: three at Slapton Sands, South Devon, in late August, with the first in West Cornwall on June 16 and another on July 14; there was one at Leigh, Surrey on September 6, and the last at Bromley, West Kent on October 14.

The usual immigrant Microlepidoptera did little better. *Nomophila noctuella* D. & S., despite an early start in late March and April in Essex and elsewhere, was a rarity except after very small influxes in September; but two were noted as far north as Caldervan, Dumbartonshire, and the last was seen at Mawnan Smith, West Cornwall, on November 22. *Udea ferrugalis* Hbn. was reported from few places only in small numbers, but seems to have been least scarce in late August. The first record was on June 6 and the last on November 22, both at Mawnan Smith, West Cornwall. *Plutella xylostella* L. is often overlooked unless it appears in swarms at light traps or among crops. It was nonetheless reported by some 20 observers from the south coast to Orkney, and it occurred in every month, from the first two at Peacehaven, Sussex on April 2 until the last at Hampstead Middlesex, on October 18. Large influxes appeared at Peacehaven in late May and early June and again in late July, and 30 were trapped at Langness, Isle of Man on June 12; from August onwards it was in smaller numbers but more widespread, probably resulting from local breeding. The species is suspected of being resident as well as immigrant.

The Noctuid *Phlogophora meticulosa* L., is a common species which many recorders may not realise is certainly both immigrant and resident. Early moths, such as the singles reported at Hampstead on April 4 and 24, were probably immigrants, since native larvae, even helped by an unusually mild winter, would not have produced moths so early, though they no doubt contributed many if not most of the considerable numbers which were widespread in southern England through June and early July. After a pause numbers again rose steeply to much higher levels in September and early October. There is then clear evidence of immigration near the coast: a trap on the cliff edge at Highcliffe, South Hampshire on September 29 scored 56 *P. meticulosa* along with nine *A. ipsilon*, and a peak of 71, with very few before or after, was registered from October 2 to 7 at Muston on the Yorkshire coast. The last record of the year, a single at Bramley, Surrey on November 21 was also probably immigrant. But, to judge from the abundance of the species there and elsewhere inland in late August and September, a second home bred generation also played some part. The northern limit of successful over-wintering in Britain is not known, and the interplay of immigration and residence is not fully understood. Six specimens of *P. meticulosa* trapped in Orkney from September 1

IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1981

to 16 may have been primary immigrants to Britain, or immigrants to Orkney of southern native stock.

We have received a number of reports of *Rhyacia simulans* Hufn., especially from Essex, Kent, and Lincolnshire. These support our previous view that such occurrences in recent years have resulted from internal spread of the species rather than from immigration. At Bradwell-on-Sea 22 were trapped in small nightly numbers over the whole period from July 5 to August 4; and in south east Lincolnshire, where the species was first seen in 1978, it is now well established. *Spaelotis ravida* D. & S., often said to be an immigrant, has recently shown a similar internal spread.

ANNEXE I

Records and localities

(The names of recorders who gave information about *D. plexippus* are starred.)

- *Alexander, Mrs R., per J C, Skomer, Pembrokeshire
- *Agassiz, Rev. D.
- *Archer-Lock, A., S. Devon
- *Allison, Mr and Mrs, per BG, S. Hants.
- Baker, B. R., Caversham, Oxon.
- Barrington, R. D., Lulworth, Dorset
- Bond, K. G. M., Isle of Man, co. Dublin, co. Cork.
- *Bovey R., per JC, Dyfi N.N.R., Merioneth
- Braddock, A., per CRP, Alfreton, Derbyshire
- Bretherton, R.F., Bramley, Surrey
- Bretherton, M.F., S. Devon
- Briggs, J., Westmorland
- Brown, D. C. G., Charlecote, Warwicks.
- Buckingham, C., Sevenoaks, W. Kent
- Buddle, R. F., Dover, Folkestone
- *Burridge, R., per MR, at sea off Ushant
- Burrows, D. S., S. Hants, N. Devon
- Burton, J. F., Bristol, Cambs, Dyfed
- Butcher, A. G. J. B., Rochester, Tenterdan, E. Kent
- Campbell, J. L., Isle of Canna
- *Campbell, W. D., *Guardian*, 21.X.81
- Carter, C. I., Tidworth, Wilts
- Chalmers-Hunt, J. M., Kent, co. Wicklow
- Chambers, R., Temple Ewell, E. Kent
- *Church, S., Chiddingfold, Surrey, Plaistow, Worthing, W. Sussex
- Christie, I. A. C., Dumbartonshire
- Clouter, F. H., Isle of Wight
- *Comont, J., Dyfed
- *Cowell, M., per CRP, E. Sussex
- Craske, R., per CRP, E. Sussex
- Cross, G., Bridport, Dorset, per BS.
- Dewick, A. J. & S. F., Bradwell-on-Sea, S. Essex
- *Elliott, B., Lizard, W. Cornwall
- Enfield, M. A., E. Kent
- Evans, K. A. G., Croydon, Surrey, Lyme Regis, Dorset
- Evie, H. C., E. Kent
- Fairclough, R., Leigh, Surrey
- Feltwell, J., Catfield, E. Sussex
- *Foggitt, G. T., Scilly
- Foster, A. P., Mawnan Smith, W. Cornwall
- Gascoyne-Pees, M., Ranmore, Surrey
- *Goater, B., S. Hants and various
- *Green, Dr. G., Winspit, Dorset
- Greenwood, J. A. C., Rogate, W. Sussex
- Gregory, J., per CRP, Par, E. Cornwall
- Hadley, M., E. Sussex, Polruan, W. Cornwall
- Hall, N., Portland, Dorset; Scilly, Tilehurst, Berks
- Harman, T. A., Reculver, E. Kent
- *Harmer, A., Lymington, S. Hants
- Hart, C., Betchworth, Surrey; Barton Broad, E. Norfolk
- *Harvey, Prof., per D. Agassiz
- *Haynes, R. F., Galway, Eire
- *Heath, J., various
- *Hedges, J., Ballakaghan, Isle of Man
- Hilliard, R. D., Ashridge, Herts.
- Holdaway, P., Biggin Hill, E. Kent
- Howarth, T. G., Beer, S. Devon
- Howell, Mrs S. J., Sussex
- *Hunt, D. per RDP, Scilly
- Imber, S., Ewhurst, Surrey
- Jackson, S. A., Newton Dale, N. Yorkshire.
- *J. Jamieson, Mrs., per D. Hunt, St. Martin's Scilly
- Jewess, P. J., Newington, E. Kent
- *Kydd, D. W., Sellafeld, Cumberland; Dolgellau, Merioneth
- Largen, R., Wiston, W. Sussex
- Lipscomb, Major Gen. C. G., Glamorgan
- Lloyd, B., per CRP, Lullington
- Heath, E. Sussex

- *Lorimer, Dr. J. A., Pembrokeshire
 Lorimer, R. I., Totteridge, Herts;
 Orphir, Orkney
 Luckens, Dr. C. J., Winspit, Dorset
 McRitchie, B., W. Essex; St. Ives/
 Portreath, W. Cornwall
 Maynard, C., per CRP, E. Sussex
 Miles, P. J. S., Cambridge
 Myers, A. A., Fountainstown, co.
 Cork
 Newbery, P. E., RSPB wardens'
 reports
 O'Heffernan, H. L., Slapton and
 Chillington, S. Devon
 O'Keefe, per BS, Heathfield, E.
 Sussex
 Owen, Prof. D. F., Dungeness,
 Dymchurch, Dover, E. Kent
 Owen, R., Bigbury-on-Sea, S. Devon
 Parsons, M., per CRP, Ninfield, E.
 Sussex; Polruan, W. Cornwall
 Payne, J. H., Wellingborough,
 Northamptonshire
 *Penhallurick, R. D., Scilly, Cornwall,
 Devon
 Phillips, J. W., Topsham, S. Devon;
 Purbeck, Dorset
 Pilcher, R. M., S. Thorsby, Lincs.
 *Plymouth City Museum, S. Devon
 Porter, J., Sheffield Park, E. Sussex
 *Pratt, C. R. P., Peacehaven and
 widely in Sussex
 Randall, C. J., Whitstable, Thanet,
 E. Kent
 Radford, J. T., per CRP, Walberton,
 W. Sussex
 *Rayner, E., Pagham, W. Sussex
 *Rogers, M., per JH, at sea
 Seaford Nat. Hist. Soc., per CRP,
 E. Sussex
 *Searle, Col., per SC, Worthing,
 W. Sussex
 Sell, M., per RIL, Scilly
 Skinner, B., Wye, Kent and various
 Smith, B., South Croydon, Surrey
 *Smith, F. H. N., Nancledra, Penhale,
 etc., W. Cornwall
 Softly, R. A., Hampstead and
 Fulham, Middx.
 Sokoloff, P., Bromley, W. Kent
 Sterling, Col. D. H., Winchester,
 S. Hants
 Walters, J. W., Hayling Is., S. Hants
 Warren, Miss E., Folkestone, Kent
 *Wildridge, B., Thame, Oxon.
 *Wills, D., per B. Elliott, W. Cornwall
 Wilson, D. E., Dungeness, E. Kent
 Winter, P. Q., Muston, S. E. Yorks.
 *Woodman, J., per CRP, Rottingdean,
 E. Sussex
 Wykes, Uploders, Dorset.
 *Zealley, M. J., per RDP, Scilly

ANNEXE II

Records of scarcer immigrant species in 1981

- EUCHROMIUS OCELLEA Haw. (1) E. Kent: Wye, 22.11, one at light in the
 field (BS).
 PALPITA UNIONALIS Hbn. (2) S. HANTS Hayling Island, 30.9. (JMW).
 S. ESSEX: Bradwell-on-Sea, 1.10 (AJD).
 [GONEPTERYX CLEOPATRA L. (1). E. KENT: Temple Ewell, Dover,
 28.7, in garden (RC).]
 NYMPHALIS POLYCHLOROS L. (2). E. KENT: Whitstable, 8.7 (CJR,
Ent. Rec. 93: 237); E. SUSSEX: Catfield, 4.4, basking on a wall and
 apple tree (JF).
 NYMPHALIS ANTIOPA L. (1) SURREY: South Croydon, in garden (RS,
Ent. Rec. 93: 241).
 DANAUS PLEXIPPUS L. AND CYNTHIA VIRGINIENSIS Drury, see
 Annexe III
 SCOPULA RUBIGINATA Hufn. (1) E. KENT: Dungeness, 5.8 (DEW *teste*
 BS).
 RHODOMETRA SACRARIA L. 21 W. CORNWALL: Mawnan Smith, 16.9,
 male, 1.10, male (APF), S. ESSEX: Bradwell-on-Sea, 15.9, male, 27.9,
 male (AJD). S. HANTS: Highcliffe, 14.9 (EPW); Winchester, 20.9 (DCS).
 E. KENT: Rochester, 10.9; Tenterden 12.9, male, 19.9, 30.9, male
 (A.J.G.B.); Sandwich, 14.9, male disturbed at 4 p.m. (JMC-H). SURREY:
 Addiscombe, 10.9, male, 11.9, male, 26.9, female (KAGE). E. SUSSEX:
 Ninfield, 28.9, 30.9 (MP per CRP). W. SUSSEX: Wiston, 15.9 (RL per
 CRP); Rogate, 20.9, male; 21.11, male, 22.11, female, both ab. *labda*
 (JACG). WARWICKS. Charlecote, 4.10, by day (DCGB, *Ent. Rec.* 93:
 241)

- ORTHONAMA OBSTIPATA F. (c. 10). S. ESSEX: Bradwell-on-Sea, 8.7, 11.9 (SFD, AJD). S. HANTS: Winchester, 15.9. (DHS); Hayling Is., 15.10, male (JMW). SURREY: Betchworth, 28.5, male (CH). W SUSSEX: Wiston, 29.7, 1.8 (RL per CRP). SCILLY: 13/20.10, several at ivy (NH).
- AGRIUS CONVULVULI L. (21) S. DEVON: Bigbury-on-Sea, 12.9, female at rest (R. Owen per DFO); Lyme Regis, 13.9, male at rest on boat in harbour (KAGE). DERBYSHIRE: Ilkeston, 9.9, male (AB per CRP), Alfreton, 30.9, a.m., at rest on a coat (AB per CRP). DORSET: Bridport, 20.9 (GC per TWH). N. ESSEX: Hatfield Broad Oak, 15.7 (per BMcR). E. KENT: Folkestone, 28.9, female, 7.10, male (RFB). N. E. Lincs: South Thoresby, 22.8 (REMP). ORKNEY: Holm, 15.9, on a school wall (RIL). SURREY: Leigh, 26.9, 28.9 (RF); Chiddingfold, 29.9 (SC). E. SUSSEX: Eastbourne town, c.17.9, on a parked car (CM per CRP); Peacehaven, 29.9, female at nicotiana: no ova present (CRP). W. SUSSEX: Plaistow, 22.9 (SC); Walberton, 27.9, 30.9, 4.10 (JTR per CRP); Wiston, 29.9 (RL per CRP). S. E. YORKS: Filey, 5.10, 10 a.m., very battered on ground near cliff top (PQW).
- ACHERONTIA ATROPOS L. (1 adult, 11 larvae). KENT, E.: Dover, 28.9, female. E. SUSSEX: Heathfield, 14/18.9., eleven almost fully grown larvae on potato plants (DO'K per BS).
- HYLES GALLII Rott. (1 adult, 2 larvae). ISLE OF WIGHT: Great Combe Wood, 2.30 p.m., one at rest (FHC, *Ent. Rec.* 93: 239). E. SUSSEX: Lullington Heath, 10.9, larva confirmed by photo (B. Lloyd per CRP). N. E. YORKS: Scarborough district, 13.9, fully fed larva, which pupated 17.10, confirmed at Museum (per PQW).
- [LYMANTRIA DISPAR L. (1) SURREY: Ewhurst, 5.7, worn male at light; later inquiry shows that this probably resulted from local rearing in captivity (SI)].
- EUROIS OCCULTA L. (3) E. KENT: Newington, nr. Sittingbourne, 2.9 (PJJ), E. NORFOLK: Irstead, 28.7 (CH). S. E. YORKS: Muston, 7.9 female, infertile ova (PQW).
- MYTHIMNA ALBIPUNCTA D. & S. (1) DORSET: Milton Abbey, 29.9, male (RDB).
- MYTHIMNA VITELLINA Hbn. (7) W. CORNWALL: 29.5, worn male (APF). E. CORNWALL: Par, 19.5 (per CRP). MID CORK: Fountainstown, before 23.9 (AAM). S. ESSEX: Bradwell-on-Sea, 2.10 (AJD). S. HANTS: Highcliffe, 31.10 (EPW). W. SUSSEX: Walberton, 11.9, 30.9 (JTR per CRP).
- MYTHIMNA UNIPUNCTA Haw. (17) W. CORNWALL: Mawnan Smith, 16.9, 28.9, 29.9, 30.9 (2), 21.11, all males (AJP). ESSEX: Bradwell-on-Sea, 28.10 (AJD). S. HANTS: Highcliffe, 20.9., 23.9, 26.9, 27.9, 3.10 (EHW); Hayling Island, 27.9, 28.9, 29.9, 3.10, 9.10 (JMW). E. SUSSEX: Beachy Head, 15.9 female at light, lacking ova (CRP).
- TATHORHYNCHUS EXSICCATA Led. (1) W. CORNWALL: Mawnan Smith, 22.11, male (APF).
- SPODOPTERA EXIGUA Hbn. (2) E. SUSSEX: Ringmer, 22.11 (CRP). W. SUSSEX: Rogate, 4.6 (JAGC).
- HELI COVERPA ARMIGERA Hbn. (1) W. SUSSEX: Walberton, 7.10 (JTR).
- HELIOTHIS PELTIGERA D. & S. (1) WARWICKS: Charlecote, 4.10, among clover by day (DCGB).
- [DELTOTE BANKIANA Hbn. E. KENT: nr. Sandwich, 4.7, a short series and more later (NFH), 4.7, one (TWH, *Ent. Rec.*, 93: 204): apparently now breeding here.]
- TRICHOPLUSIA NI Hbn. (2) W. CORNWALL: Kynance Cove, 26.8 (BE). DORSET: Portland, 5.9 (NMH).
- DIACHRYSLA ORICHALCEA F. (1) W. SUSSEX: Walberton, 12.8 (JTR per CRP).
- CATOCALA FRAXINI L. (1) S. HANTS: Lymington, 1.10, female (AH).

(To be continued)

Letter to the Editor

Dear Sir,

On reading the reports of entomological holidays which are published from time to time, one striking feature is that collecting is almost if not entirely confined to daytime activities; may I therefore put forward a plea through the *Record* for collectors to include some night work during their holidays? The fact that there is scope for breaking fresh ground in this respect during a Continental holiday was brought home to me when I bought the first two moth volumes of *Mariposas de la Peninsula Iberica*, a work on Spanish and Portuguese lepidoptera very much on the same lines as Heath's *Moths and Butterflies of Great Britain and Ireland*. Time and again question marks appear on the distribution maps, and in the chapter on moth collecting, the authors discuss sugaring, adding that little use has been made of this technique in the Iberian Peninsula. And it was thanks to the use of the m.v. lamp that *Endromis versicolora* L. was first discovered in Spain in 1964. Who knows what other discoveries there still remain to be made? — C. L. NISSEN, Batiment F2, App. 271, Residence Beausejour, ave. Clemenceau, 77100 Meaux, France, 15.iii.82.

Current Literature

The Oxford Book of Insects by John Burton and others. 213 + viii pp, 96 pp of colour illustration. Oxford University Press, 1981. Pocket edition £2.50.

This volume is a reduced format version of the 1979 edition. Measuring 11 x 15 cm it is certainly pocket-sized, although the paper cover would not last long if used in this mode. The work follows the format of other "Oxford" books in this series — after a brief introduction to each group there is a concise but informative description of each species considered, with the illustration appearing on the opposite page. The volume concludes with a small section on classification and structure of insects, notes on the various orders, a brief bibliography (listing a number of works that are virtually unobtainable) and an index.

The standard of illustration is very high for a popular work, and the reviewer was able to recognise most of the Lepidoptera and Coleoptera illustrated! Nearly 800 species are shown, most in 'natural' poses against a background of appropriate food plant. The illustrations have suffered a little from reduction — some of the Diptera are rather dark, and some larvae are unrecognisable. The nomenclature, at least for the Lepidoptera, is from the 'South' era, and authors are not given for scientific names. The coverage of orders is uneven, with Lepidoptera predominating.

Despite these minor criticisms the text and illustrations provide excellent value for money. For the general naturalist this probably ranks amongst the best available popular works on insects. — PAUL SOKOLOFF.

THE 'TYPES' OF *MANIOLA JURTINA SPLENDIDA* WHITE (LEPIDOPTERA: SATYRIDAE)

By GEORGE THOMSON*

Between the years 1871 and 1872 Dr. Francis Buchanan White wrote and published his fine work *Insecta Scotica* in serial form in the *Scottish Naturalist*. Although his travels took him to many parts of Britain and Europe collecting and studying Macro- and Microlepidoptera, Coleoptera, Hemiptera as well as other invertebrates and plants, he never neglected his native Scotland or Perthshire the county town of which was his home for most of his life. His superb collection survives almost intact apart from some specimens of Macrolepidoptera which have mysteriously disappeared, some important Coleoptera which were transferred to the British Museum (Natural History) and his Hemiptera which are said to have been loaned to a museum in the United States in the 1920s and which have never been returned.

FIG. 1



FIG. 2



FIG. 3



FIG. 4

Maniola jurtina splendida White. Figs. 1 and 2, male syntype upper side and underside respectively. Figs. 3 and 4, female syntype upper side and underside respectively. All natural size.

The Rhopalocera section of *Insecta Scotica* lists some thirty-six species occurring in the country, although this number includes unconfirmed species such as *Pyronia tithonus* (Linnaeus), *Argynnis adippe* (Denis and Schiffermuller) and *Hamearis lucina* (Linnaeus). He discounts *Erebia ligea* (Linnaeus) and does not include *Cartero-*

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cephalus palaemon (Pallas) which was not found in Scotland until more than thirty years after his death. The only mention of a 'new' butterfly in this section of his work is the form of *Maniola jurtina* (Linnaeus) called *splendida* which he describes thus:

"Var. (and ab.) *splendida*. — Larger and brighter coloured; the apical spot of the front wing with two white dots." And he continues: "Found by Mr. A. Davidson in the island of Longa, on the west coast of Ross-shire. Mr. Davidson informs me that it is very plentiful in the island, and that it is the only form occurring there. Occasionally in Aberdeenshire (J. W. H. Traill). I have taken this variety in the island of Capri near Naples." Note that the locality is Longa Island, Ross-shire — not Lunga, Argyllshire as stated in Higgins and Riley (1970, 1973, 1975, 1980).

Buchanan White did not designate types as such, but it would be expected that he would have retained examples of this race in his collection. P. P. Graves (1930) in his redescription of *splendida* said that he had searched for the Buchanan White 'types' in the Perth Collection without success: "Buchanan White's types could not be found in the Perth County Museum. . ."

No further search for *splendida* was made until the White collection was examined for the purposes of the author's work on *Maniola* (Thomson, 1969, 1970). My quest was no more successful than that of Graves some thirty-nine years earlier, although there were specimens of the Capri form to which White referred in his description. There the matter would have rested had it not been for an accidental discovery. While studying the collection of Lepidoptera for a quite different purpose (Thomson, 1980), I noticed that the contents of box number 15 comprised an odd mixture of families including Noctuidae, Geometridae, Arctiidae, Saturniidae, Lycaenidae, Pieridae, Nymphalidae and also a number of Microlepidoptera. The most interesting specimens were those in the last row, three *jurtina*, a set male and female and a pinned but unset female, all being of the form found in the north-west of Scotland which we know as *splendida*. The three *jurtina* were unlabelled. Nor had they numbers referring to entries in one of the cabinet books in which White kept note of specimen data. Two volumes of his notes survive, although the first 200 entries in the first book have been lost. It is unlikely that these specimens were added to the collection by someone else at a later date. The insect collections in the Perth Museum, until very recently, have been carefully segregated and kept as individual collections rather than being absorbed in a single large collection. There was a separate 'Perthshire Collection' and some use of individual specimens has been made from time to time for display purposes. It is more probable that the odd assortment of lepidopterous insects in case 15 represents material given to White. All of his main collection was of his own making, supplemented by purchased specimens of rarer European species. The comment in his description, "found by Mr. Davidson in Longa", would suggest that the three *jurtina* were given to him by Davidson and the two set specimens are those on which he based his description.

The 'types' themselves are worth close examination as they contrast greatly with Graves' topotypes illustrated in his plate, particularly in the female underside. Graves' material had a rather uniform underside to the forewings in the females with a somewhat pale underside to the hindwings on which the fulvous streak between the discal and postdiscal areas (Hubner's line) stands out clearly. It has already been suggested that his series was atypical of the north-western race in this respect (Thomson, 1970). On the other hand, the Buchanan White pair is representative of the widespread *splendida* form, having an extremely well marked medial line between the basal and postdiscal areas of the female underside forewing. Furthermore, this form has a rather dark underside hindwing which tends to obscure the fulvous Hubner's line. In all other respects both the male and the female are similar to Graves' specimens having large bipupilled apical eyespots and the extensive fulvous markings in both sexes.

The specimens in the Buchanan White collection have been designated as types and labelled thus:

(a) subspecies *splendida* White. Syntype male (figs. 1 and 2). North-west Scotland, probably Longa Island, Ross-shire: A. Davidson.

(b) subspecies *splendida* White. Syntype female (figs. 3 and 4). North-west Scotland, probably Longa Island, Ross-shire: A. Davidson.

The third (unset) specimen found beside the abovementioned types has been labelled:

(c) subspecies *splendida* White. Syntype female. North-west Scotland, probably Longa Island, Ross-shire: A. Davidson.

All specimens remain in the Perth Museum.

Acknowledgements

My sincere thanks go to Mr. James Blair, Curator of the Perth Museum and Art Gallery and Mr. Michael Taylor, Keeper of Natural History, for their generous help while I was working in the museum and for allowing me access to the Buchanan White collections.

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THE DECLINE OF THE INDIGENOUS MACROLEPIDOPTERA OF ABBOT'S WOOD, EAST SUSSEX

By M. HADLEY B.Sc., A.R.C.S., F.R.E.S.*

Whilst recording the demise of various native Lepidoptera for the Nature Conservancy Council, it was immediately apparent that a significant number of species had been lost from Abbot's Wood, a favourite haunt of the Victorian collector. The woodland was known to many if not to most of the great Lepidopterists of the past century. So fine were the stands of mature Oaks, and how common were the specialities, that Thomas Salvage ran a Butterfly Farm on its outskirts, trading on the abundant material contained therein. The author having spent most of his entomologically 'formative' years collecting in the Eastbourne area, feels compelled therefore to put pen to paper concerning the loss of species that this woodland has suffered.

The woodland is approximately 1½ miles square in area, and situated just north-west of Polegate. Unlike many modern woodlands, there has been no overall change in its size, although the surrounding environs have seen much agricultural improvement. However, there have been considerable changes within its borders. These can be examined by consulting the Ordnance Surveys of 1898 and 1925, and through to the present day. The woodland was totally deciduous prior to the turn of the century, consisting mainly of mature trees of great antiquity, until the 1939-45 war when most of the oaks were felled, excepting those of constituent woodlands on the periphery. The first signs of coniferisation began with a very small plantation on the 1925 O.S. revision in the centre of the wood. Nowadays the whole area, excepting the fringes, stands as a monument to the softwood industry.

This paper compares the qualitative and quantitative changes that have happened to the Macrolepidoptera. Only species that are resident have been used in this compilation, with known migratory species excluded from the comparison.

¹The Macrolepidoptera are defined here as those species represented in volumes 1 and 2 of South's *Moths of the British Isles*

Methods of Comparison

Eastbourne is unusual in many respects, but none less than the fact that it has a detailed entomological history. The history of the Lepidoptera in the Eastbourne area has been covered by four separate publications from 1885 until the present date.

The first list covering the whole of Sussex, Jenner (1885), issued in the *Proceedings of the Eastbourne Natural History Society*. The present author extracted all records cited for Abbot's Wood and where species had been noted as common, or abundant throughout

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the county's woodlands. This paper comprised two lists supplied to J. H. A. Jenner by Messrs. G. T. Porritt and W. H. Tugwell, both of whom collected extensively in the area.

The second list of species for the county is that of Goss and Fletcher (1905), in the *Victorian County History of Sussex*. The species lists in this were largely drawn up by J. H. A. Jenner and W. H. B. Fletcher, although notable contributors were R. Adkin, J. Anderson, C. G. Barrett, W. M. Christy, A. C. Vine and many others. Again, the same technique was applied, of extracting records specifically relating to the area and those species which it was stated were general to the County's woodlands.

The third publication is perhaps the best known upon the area, if not one of the best produced local lists of its kind. Issued in parts between 1928 and 1934, the critical volume dealing with the moths was published in 1930, in the *Transactions of the Eastbourne Natural History, Photographic and Literary Society*. This dealt with the detailed distribution of all species, and Adkin noted clearly whether species were present at the time of writing. This fine list was accompanied by a long series of half-tone plates of the common species.

The last list to cover the wood was that of the present author, Hadley (1980). Records from Abbots Wood were abstracted but noteworthy lists for the woodlands were submitted by Messrs. C. Pratt, S. W. P. Pooles and M. Parsons.

This completed a series of publications documenting the history of this woodland from 1885 until the present day. To aid completeness of this report, data held at the Biological Records Centre at Monks Wood was abstracted and checked to make sure no noteworthy species had been overlooked.

For the purposes of this comparison, the lists of Jenner, Adkin and Hadley were used. The present writer decided against use of the *Victoria County History*, as all species covered by that list for the area in question are listed by Adkin (1930).

Results

In a paper of this sort, long species lists have only a limited use, so I decided to omit these from the published account for the sake of brevity, and also because, for the purposes of comparison, 'species totals' are of more significance. Table One shows the total number of species which were recorded by each author for the wood. The number of species found to occur in the wood in all three accounts (ie. 1885-1980) was 156.

In each list, there were a number of species which did not occur in either of the other two lists, and these may be accounted for by temporary residence, migration (note that well known migrants were excluded from the compilation wherever possible), overlooked species and species that had not been taxonomically separated. The total number of species in this category for each author was Jenner 44, Adkin 47 and Hadley 24.

Extinctions in the area were treated as species that were noted as being present by a particular author, but not recorded before or after. For example, Jenner recorded *Apamea sublustris* (Esp.), but the species was not recorded by either Adkin or Hadley, and *Apamea crenata* (Hufn.) which was noted by Jenner and Adkin, but not by Hadley. Thus, species lost between 1885 and 1930 totalled 44, and those lost between 1930 and 1980 equalled 95. Provision was made for species that were not recorded by Adkin but were noted by the other two authors: these species totalled 19. The total number of species recorded for the whole period 1885-1980 was 423 species.

Discussion

I do not intend to enter into a lengthy discourse on these results, but shall highlight some of the major factors.

A steady decline in the Macrolepidoptera of Abbots Wood is happening now, and has been going on for nearly a century, an acceleration in this trend has occurred since the 1930s. This decline is substantiated by three sets of data. Thus, the total number of species has declined (since 1930), the number of new arrivals has declined, and the number of species becoming extinct has increased from 44 to 95 during the two last recording periods.

Three major factors must be considered to have shaped these results: habitat loss, climate and changing collecting techniques. Trapping using Mercury Vapour light is an efficient and highly productive method of sampling a fauna, but it tends to make a lepidopterist slothful and lazy (speaking from experience), and traditional techniques such as sugaring and beating get forgotten so that many species are overlooked this way. For this reason, the writer feels the advantage of light for collecting has been offset by the loss of traditional techniques and has consequently lent only minimal bias to the results. Climate is as unpredictable as the beasts themselves. However, it is believed, and there seems to be a general consensus of opinion of this, that there has been a downturn in the climate this century. Lastly, and perhaps most significantly, the changing environment within the wood cannot be underestimated. The final blow to the woodland species came with the felling of the great stands of oaks just after the 1939-45 war, and latterly, afforestation by the Forestry Commission, resulting in the present day legacy of substantial areas of sterile conifer plantations and regularly mown rides.

Table 2 shows the species of Draft Red Data Book status which have occurred in the wood since recording began. It paints a depressing picture of loss. *Siona lineata* (Scop.) probably died out due to natural causes, change of climate or lack of suitable habitat for the larvae. The remainder of the species were recorded again by Adkin, and he turned up specimens of *Catocala promissa* (D. & S.) which was probably temporarily established in the area. However, fifty years after Adkin, not a single Draft Red Book species remains, for which habitat loss and climate must be blamed.

DECLINE OF INDIGENOUS MACROLEPIDOPTERA OF ABBOT'S WOOD

TABLE ONE

Histogram to show the total number of species recorded from Abbot's Wood by each author.

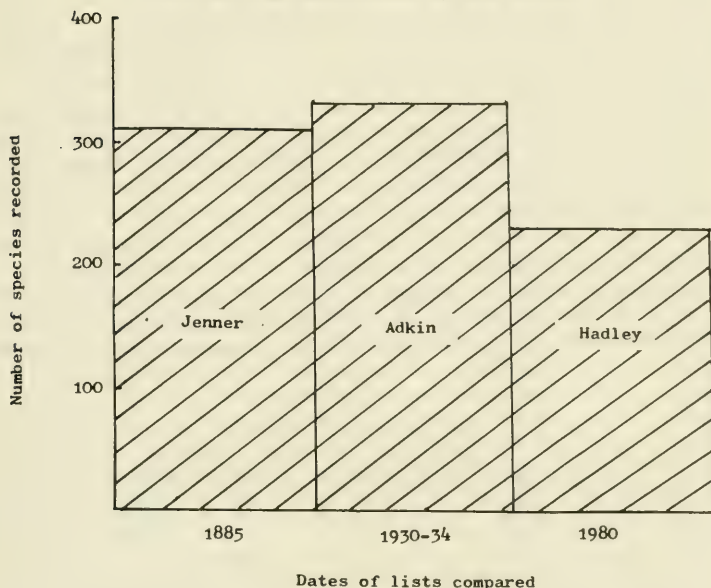


TABLE TWO

Table of draft Red Data Book species of Moths Recorded from Abbot's Wood, East Sussex.

Species	Red Data Book Category	Species recorded by:-		
		<u>Jenner</u>	<u>Adkin</u>	<u>Hadley</u>
<u>Siona lineata</u>	1	+	-	-
<u>Cucullia gnaphalii</u>	1	+	+	-
<u>Eriogaster lanestris</u>	2	+	+	-
<u>Hemaris fuciformis</u>	2	+	+	-
<u>Hemaris fityus</u>	2	+	+	-
<u>Jodia croceago</u>	3	+	+	-
<u>Momo alpium</u>	3	+	+	-
<u>Catocala promissa</u>	3	-	+	-
<u>Heterogenea asella</u>	3	+	+	-
<u>Cyclophora pendularia</u>	3	+	+	-

+ indicates presence of species

The only recent success was the establishment of a colony of *Spargania luctuata* (D. & S.) during the 1960's and early 1970's, in the one remaining area of the woods that remains in a similar condition to when it was first constituted, namely that of the area known as Milton Hide. Encouraging signs have been the opening of the rides by the Forestry Commission and the clearance of some of the large tracts of Gorse that were becoming rampant. One cannot underestimate the negative effect of routine ride maintenance as it reduces floral diversity, upon which adult insects are dependent as well as pruning back severely sources of larval foodplants. A rotational system leaving wide ride margins would be less labour intensive and ecologically preferable. The clearing of many of the other areas together with the planting of young birch and other broadleaves has had beneficial results, with several species reoccurring after absences of many decades, species such as *Acronieta alni* (Linn.) and *Furcula bicuspis* (Borkh.). If this trend is continued the long-term future of the woodland is not so bleak as one might expect.

Acknowledgements

The writer would like to make due acknowledgement of the resources and time of the Nature Conservancy Council and the Biological Records Centre, Monks Wood, in the compilation of this paper.

Individually I wish to express my thanks to A. E. Stubbs, J. Heath, C. Pratt, M. Parsons and S. W. P. Pooles for their kind help, advice, and constructive criticism.

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PYRRHOCORIS APTERUS L. (HEM.: PYRRHOCORIDAE) IN DORSET. — In July 1979 I was brought two specimens of *Pyrrhocoris apterus* which had been taken at Kimmeridge on the Dorset coast. The only known permanent colony for this handsome black and red species is on Oar Stone Rock, a small island off the Devon coast, near Torquay, where it has been present for very many years. — S. C. S. BROWN, 158 Harewood Road, Bournemouth, Dorset.

MICROLEPIDOPTERA: A REVIEW OF THE YEAR 1981

By the Rev. DAVID J. L. AGASSIZ*

1981 was not a year many lepidopterists in Britain will remember with great relish. The Spring was cold and wet and seemed to go on long after it should have been Summer. Even if the moths were enduring the weather there were few opportunities for students to pursue them in those months when so many larvae can be found.

It seemed in due course that the insects also had not fared very well, for when better weather came, which it did in July and August, the population of many species seemed to be smaller than usual, as was the case with the larger moths.

Books are often set aside in favour of field work during the height of the season, but this year was cheered by the publication in the summer of *The Smaller Moths of Essex* by A. M. Emmet. Not many counties have a good list of 'micro' species and very seldom is such a list produced separately; it is therefore a comment on the prominence of the study of smaller species that a County Field Club should undertake such a work at this time. The list itself is a tribute to the energy and thoroughness of the author, and it is I believe the first attempt at mapping microlepidoptera by 10km grid squares.

Excitement is often aroused by species added to the British list, and these also were few. However, it often happens that discoveries of this kind only come to light a year or more later, and this was the position in 1981. *Dioryctria schuetzeella* Fuchs was taken by several collectors in Kent where it seems to be established as resident and presumed to be feeding on Norway Spruce; it transpired that the first specimen was taken by J. M. Chalmers-Hunt the previous year, but the identity was established, and the species found to be resident in 1981. It will be interesting to see how widespread this species becomes, for so many recent colonists of our Islands are associated with conifers. This is not surprising in view of the addiction of foresters to the growing of these, but despite that one suspects that more species may yet be found if only entomologists were more prepared to endure the monotony of these plantations and work them thoroughly, looking for likely species which are known to occur on the continent of Europe. Towards the end of the year it became clear that *Oegoconia caradjai* Popescu-Gorj & Căpușe was a resident species which had hitherto been confused with *O. quadripuncta* Haw. This makes for a small number of additions, none first taken in 1981, but already there are indications of one of two others which may come to light in 1982 or thereafter.

Species added in recent years continued to be found, as usually happens, for example *Scythris inspersella* Hübn., *Coleophora linosyridella* Fuchs and *Metzneria aprilella* H.-S. were bred, the latter in great numbers from *Centaurea scabiosa*, but in no case was the known distribution significantly extended.

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As for rare species, it was encouraging to hear of a further record of *Paramesia gnomana* Cl. of which the first authentic specimens were taken by Godfray in 1977. A third specimen of *Lampronia flavimitrella* Hb. was taken in Kent by N. F. Heal, but its life history remains to be unravelled. Many searches for *Agonopterix astrantieae* Hein. in the South of England proved fruitless, but two were bred from North Wales by H. N. Michaelis. His name should have been included in my Review of the Year 1980 among the discoverers of *Bucculatrix cidarella* Zell. feeding on *Myrica gale*, a habit which has now been reported from Ireland.

Sustained interest in the microlepidoptera has produced a number of interesting records, which demonstrates the value of study in this and other less popular fields. It is remarkable that even in big cities like London, species of considerable interest can still be found. The list of species recorded from Buckingham Palace by Dr. J. Bradley continues to grow, and in recent years has included *Morphaga choragella* D. & S., *Coleophora tamesis* Waters, *Aroga velocella* Zell., and *Teleiodes alburnella* Zell.; S. A. Knill-Jones has recorded *Nemapogon granella* Linn. and *Tinea pallescens* Stt. from central London, and at Hampstead R. A. Softly has had *Microthrix similella* Zinck.

There now follows a list of some of the more interesting records, inevitably it is incomplete, and another person would select different species for mention; I have tried to include new, or renewed county records which extend the known range of a species and other less common species which seemed worthy of comment. They are arranged in the order of Kloet & Hincks (1972). *Micropterix tumbergella* Fabr., Perthshire (K. P. Bland); *Stigmella samiatella* Zell., N. E. Essex (A. M. Emmet) more than doubling the number of specimens taken in Britain; *S. acetosae* Stt.; *Adela croesella* Scop., Dumfries (K. P. Bland); *Meesia richardsoni* Wals. still resident at Portland (D. J. Sterling); *Monopis imella* Hb., Co. Cork, Eire (D. J. L. Agassiz); *Ypsolopha lucella* Fabr. including a ♂, Suffolk (A. M. Emmet); *Coleophora violacea* Ström. Perthshire (K. P. Bland); *C. vibicigerella* Zell., Kent (N. F. Heal & R. & A. J. Fairclough); *C. machinella* Bradley, Surrey (R. & A. J. Fairclough); *C. argentula* Steph., E. Lothian and *C. sylvaticella* Wood, Aberdeen (K. P. Bland); *Esperia oliviella* Fabr., Kent (J. Fenn) and Hants. (D. J. Sterling); *Agonopterix bipunctosa* Curtis, Anglesey (H. N. Michaelis) and Cardiganshire (A. N. B. Simpson); *Eulamprotes wilkella* Linn., Essex (A. M. Emmet); *Syncopacma larseniella* Gozm. from many localities after R. J. Heckford¹ showed that most records of *S. cinctella* Cl. refer to this species; *Blastodacna atra* Haw., Hants. (J. R. Langmaid); *Phalonia minimana* Carad. and *Aphelia unitana* Hb., Selkirk (K. P. Bland); *Olethreutes arcuella* Cl., Kent (J. Fenn) and lastly a specimen of the rare migrant *Euchromius ocella* Haw. was taken in Kent in November by B. F. Skinner.

¹We expect publication of a paper by R. J. Heckford on *Syncopacma larseniella* in the next issue of the *Record* — Editor.

ADDITIONS TO THE MACROLEPIDOPTERA OF YORKSHIRE

By S. M. JACKSON*

Since publication in 1970 of *The Lepidoptera of Yorkshire (Macro-lepidoptera)*, compiled by members of the Lepidoptera Committee of the Yorkshire Naturalists' Union, and edited by C. I. Rutherford, there have been 12 additions to the County list as set out below. Nomenclature accords with that of Kloet & Hincks (1972).

Pseudoips prasinana L.: Scarce Silver Lines. This species has long been known to occur in N. Lincs., but the first authentic Yorkshire record is of five larvae being beaten from oak at Potteric Carr Nature Reserve (vc. 63) by R. I. Heppenstall in late May 1978. He later took the moth at light at Rossington, near Doncaster (vc. 63) on 28th July 1978.

Meganola albula D. & S.: Kent Black Arches. One taken at m.v. light by P.Q. Winter at Muston near Filey (vc.61) on 16th July 1973. This is the first northern record of a species usually found south of London, especially on the coasts of Kent, Sussex and Hants.

Nola aerugula Hbn.: Scarce Black Arches. This species was added to the Yorkshire list when Barry Spence took two at light at Kilnsea (vc. 61), one on 26th and one on 27th July 1980.

Simyra albovenosa Goeze: Powdered Wainscot or Reed Dagger. Found for the first time in Yorkshire in 1970 when B. Spence took it near the reed bed at Kilnsea (vc. 61). It is now considered to be extinct there as the habitat has been washed into the sea.

Mythimna vitellina Hbn.: Delicate. Was taken for the first time in Yorkshire at Muston near Filey (vc. 61), on 11th October 1978, by P. Q. Winter.

Lithacodia pygarga Hufn.: Marbled White Spot. Although there is an old record for Wharnccliffe Woods from 1872, this was later considered erroneous. Therefore, when several were seen at light on Skipwith Common (vc. 61) on 1st July 1978 by W. Jagger and S. M. Jackson, this was regarded as constituting a new county record. The species has also been seen there annually up to 1981.

Scopula marginepunctata Goeze: Mullein Wave. Recorded for the first time in Yorkshire by S. L. Sutton, who took it at Spurn (vc. 61) on 16th August 1972.

Xanthorhoe quadrifasiata Clerck: Large Twin-spot Carpet. After recently extending its range into Notts., this species was first noticed in Yorkshire in 1978, by Ray Hawley at Hornsea Mere (vc. 61), and later, A. S. Ezard noted it at Rudston (vc. 61) on 28th July and 18th August 1980.

Eupithecia insigniata Hbn.: Pinion-spotted Pug. First found in Yorkshire when Paul Ingham took two at Snainton (vc. 62) on 5th and 6th June 1977. Also taken at East Ayton (vc. 62) in 1979, and at Muston near Filey (vc. 61) on 7th June 1979.

Chloroclystis chloerata Mabille: Sloe Pug. First noticed in Yorkshire by P. Q. Winter who found larvae on sloe at Muston on

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4th May 1975, then at Settrington near Malton on 5th May 1976 and at Harpham near Driffield on 1st May 1977 (all in vc. 61). Also found at Wass (vc. 62) by Dr. A. M. R. Heron.

Semiothisa notata L.: Peacock Moth. The sole Yorkshire record is of one taken at m.v. light in Staindale near Pickering (vc. 62) on 27th August 1977 by P. Q. Winter and S. M. Jackson.

Deileptenia ribeata Clerck: Satin Beauty. This species, long known to occur in N. Lancashire, was not noticed in Yorkshire until August 1974 when S. M. Jackson recognised some worn specimens (by their pectinated antennae), which came to m.v. light operated by W. Jagger near Pickering. The species, probably previously confused with *Alcis repandata* L., is now known to be widespread in north-east Yorkshire, with further records from Wass, Scarborough, Buttercrambe Woods (1980 and 1981) and Pickering (all in vc. 62).

Moths of Southern Africa by E. C. G. Pinhey. 273pp. 63 col. pl. + 18 fig. 4to. Cloth. Pub. A. A. Balkema (Rotterdam) 1979. £21.75.

To attempt to cover the moths of Southern Africa, estimated as exceeding 10,000 species, in a single volume is a daunting task. This volume describes and illustrates some 1183 species selected from the majority of families as representing the more colourful or interesting species, or those of economic importance. The vast bulk come from the families of larger moths. Introductory chapters cover general characteristics and biology, collecting, rearing and preparing insects and identification and classification.

The bulk of the text comprises the systematic section. The general format provides keys to families where appropriate. A description of the family is given and there follows a treatment of selected genera. Each genus has the reference to its original description, synonymy and name of type species. Individual species are similarly treated with a description of salient features (usually wing patterns), notes on larvae (where known) and distribution.

In a work of this nature, the illustrations are of paramount importance. The plates are made from photographs of set specimens and on the whole are of excellent quality. The specimens are photographed against a variety of coloured backgrounds, predominately white and blue/green. The latter is very effective for light coloured insects but unfortunately many white-winged moths are pictured against white backgrounds making identification impossible. Each specimen is numbered to enable easy reference to the text description. The work concludes with a glossary, bibliography and three indices — to pest species, host plants, and a general index.

On the whole, the author has produced a readable and useful work, although the juxtaposition of general introduction and detailed references to original descriptions suggests an attempt to cater for too wide a readership. The presentation of the volume is very good and there is an attractive, painted frontispiece. Considering the quality and quantity of the illustrations, the price represents very good value. — PAUL SOKOLOFF.

DERMAPTERA FROM THE GUNONG MULU
NATIONAL PARK, BORNEO.
A CORRECTION AND AN ADDITION

By A. BRINDLE*

In a previous paper on the earwigs collected in the Gunong Mulu National Park (Brindle 1980), three female earwigs were listed as *Parapericomus* sp. Philip Chapman, to whom I am indebted for some of the earlier specimens, has now collected three more of this species, of which one is a male, and this shows that the species concerned is *Nala ornata* Borelli and not *Parapericomus*. The three latest specimens were taken under damp rocks near the stream by Lubang Payau Air (Deer Water Cave), 22.8.1980. *Nala ornata* was originally recorded from south of Gunong Mulu in the Baram river area. The entry in Brindle (1980) "4. *Parapericomus* sp." thus should be replaced with "4. *Nala ornata* Borelli", and the family is Labiduridae. The family Labiidae begins with "5. *Auchenomus setulosus* Burr".

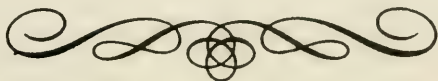
A single female of *Chelisoches brevipennis* Borelli (Chelisochidae) was found on guano in a pocket in the flowstone wall of Water Polo Cave (formerly Pinnacles Cave), Gunung Api, 18.12.1980. Although female earwigs are often difficult to name satisfactorily, this species is distinctive in closely resembling the common Oriental and Australasian *C. morio* (F.), from which it is distinguished by the short elytra and reduced wings. Originally described from Los Banos, Luzon, Philippine Islands (Borelli, 1923), it is identical, according to Borelli (1931-4) with *C. bimammatus* Hebard, the latter name being a synonym. Interestingly the latter was described from Batu Cave, Selangor, Malaysia, so there seems to be a correlation of habitat. From known habits of *C. morio*, *C. brevipennis* is likely to be a predator of smaller animals.

The list of earwigs from the Gunong Mulu National Park is thus eight.

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BUCCULATRIX CIDARELLA ZELLER,
(LEP. LYONETIIDAE) ON *MYRICA* GALE

By H. N. MICHAELIS*

In the works and published notes consulted, alder is always listed as the sole foodplant of this species. On 8th September 1980, I took E. C. Pelham-Clinton and J. Langmaid to a low lying marsh (100 ft.) near Llanbedrgoch, Anglesey (VC 52). Our object was to look for *Agonopterix bipunctosa* (Curtis) among the *Serratula tinctoria* (Saw-wort) and *Glyphipterix schoenicolella* Boyd; the last was already recorded from the site. There is a fine growth of *Myrica gale* on which J. L. found empty leaf-mines which prompted a search producing vacated circular white spinnings of the moulting "chambers" of a *Bucculatrix* species. A few larvae were found of which most fell to the ground, together with a few inhabited moulting spinnings. Beating into our nets showed that many larvae were present. Some of these spun up the next day on the lid and sides of the box in a yellowish-grey ribbed shuttle-shaped cocoon. The larvae feed on the underside of the leaf after vacating the mine, and leave the upper cuticle intact to form a window pattern of feeding, which cannot in shape be confused with the typical *Coleophorida* mine of *C. viminetella* Zeller, which was also present.

As we thought and hoped we had a species new to Britain, I attempted to force an early emergence by means of refrigeration followed by gentle heat. This did not succeed and the remaining cocoons were kept in a cold frame to produce moths from 26th May to 18th June 1981. On 11th September, E.C.P.-C. and J. L. went to Borth Bog, Cardigan (VC 46) to meet Maitland Emmet and all found larvae plentiful on *Myrica*. A further visit by H.N.M. to a more western site in Anglesey showed larvae to be equally plentiful. As the shrub is plentiful on high ground in Snowdonia (VC 49), search was made at varying heights up to 1,200 feet in the next two weeks, but no sign of larvae or feeding pattern was seen on the *Myrica* there, though a few moulting spinnings were seen on alder leaves nearby. Conversely, there is a stand of alder within 100 yards of the Llanbedrgoch *Myrica* and though beaten and searched in June and August 1981, neither moth nor larva was seen among this alder.

The 1980 moths appeared to be *cidarella* and this was later proved by genitalia preparations made by E.C.P.-C., J.L. and J.D. Bradley. As further confirmation, I am told that Mark Shaw was able to feed Anglesey larvae from *Myrica* on alder leaves.

In October 1980, I searched for an hour for cocoons on branches and stems of *Myrica* and found only one. Remembering that cocoons of *B. maritima* Stainton are found on nearby grass leaves rather than on *Aster tripolium*, I found five cocoons of *B. cidarella* on grass and sedge leaves; these had weathered to brownish and the cocoons were not easily seen. I visited the same site on the evening of 23rd June 1981 and found moths resting on or flying around *Myrica* from 1700 hrs. onwards (many were also disturbed by beat-

*5 Glan-y-mor, Glan Conwy, Colwyn Bay. LL28 5TA.

ing). Possibly, this was a mating flight though I saw no paired moths.

Meyrick says this moth is fairly common among alder, though I have never found it so in north Wales or in north-west England where alder is plentiful and in Lancashire is used for making the soles of clogs. In fact, I usually find it only singly as a mine, larva or moth. What little I have seen of the *Myrica* feeder suggests that it occurs on low ground, possibly near western coasts. There is a fine growth of *Myrica* in a similar situation at Witherslack (VC 69) which might be worth searching in August or September. Though the species has a new foodplant on which it seems to congregate in large numbers when compared with alder, there is no suggestion that it should be raised to sub-specific rank.

To conclude, on that pleasant September day, E.C.P.-C. and J. L. had *Glyphipterix schoenicolella* which was new to one or both, and I found one *Agonopterix bipunctosa* new to me and probably to north Wales.

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FOODPLANT OF COLEOPHORA SALICORNIAE WOCKE IDENTIFIED AS SALICORNIA FRAGILIS P. W. BALL AND TUTIN. — The larval cases of *Coleophora salicorniae* reputedly being found on one species of Glasswort only, and in the hope of avoiding a repetition of the abortive search of the acres of foodplant that cover the saltmarshes at this time of the year, I took a plant upon which I found two larvae at Stoke Saltings, Kent on 11th October, 1981 to the Maidstone Museum where Mr. Eric Philp kindly named it as *S. fragilis* which is one of the common species found in the 'middle' saltmarsh zone, particularly on the pure mud sides of channels below the fringe of *Halimione* and often forming pure stands. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

THE WOOD WHITE: LEPTIDEA SINAPIS L. IN SOUTH DEVON. — On 6th August 1981 a pair of wood whites were seen flying over rough vegetation on the undercliff to the west of Branscombe on the South Devon coast. These insects were observed for some thirty minutes and seemed perfectly at home in an area more akin to their typical habitat in continental Europe than on the English mainland. There are plenty of trees in the area — beech and oak being dominant — but no large areas of unbroken woodland similar to that which is the favoured habitat for this insect in Surrey and Sussex. — P. J. BAKER, Mount Vale, The Drive, Virginia Water, Surrey.

ERYNNIS TAGES L. AB. RADIATA BROWN: A CORRECTION. — In vol. 94, p. 69, line 5, for Mr. John Swiner read Mr. John Simner. — R. D. G. BARRINGTON.

RECORDS OF PHORIDAE (DIPTERA) REARED FROM FUNGI

By R. H. L. DISNEY* and R. E. EVANS**

One of us (R.E.E.) reared a number of Phoridae from fungi collected at various localities in Norfolk during 1980. The following species were obtained:

Megaselia bovista (Gimmerthal)

Nine from *Lycoperdon* (= *Calvatia*, = *Langermannia*) *giganteum* (= *L. bovista*) in August, from North Tuddenham Common (Grid ref. 63/0311). Gimmerthal (1848) reared this species from *L. giganteum*. Colyer (1954) reported it from cultivated mushrooms (*Agaricus bisporus*).

Megaselia buxtoni Colyer

Five from *Thelephora terrestris* in September and October from Swanton Novers Wood (63/0032). Previously it has been reported from *Pleurotus cornucopiae*, *Polyporus squamosus* and *Gloeoporus* (= *Polyporus*) *fumosus* (= *Bjerkandera fumosa*) (Colyer 1954, Buxton, 1961, Chandler, 1973).

Megaselia flava (Fallen)

Six from *Peziza varia* in July and August, from Warren Wood (63/0911); four from *Pluteus cervinus* in August and September, from Wayland Wood (52/9299); and 42 from *Peziza micropus* in August, from Wayland Wood. Previously reported from *Peziza* (= *Aleuria*) *repanda* (Colyer, 1954), *Russula heterophylla* (Schmitz, 1948), *R. aeruginea* (Eisfelder, 1956), *Cortinellus edodes* (Kiyoku, 1968) *Amanita* and *Tricholomopsis* (Chandler, 1978).

Megaselia flavicans Schmitz

Six from *Amanita excelsa* in June from Mousehold Heath (63/2410); and eight from *Russula cyanoxantha* in September, from Holkham Woods (53/9045). Previously reared from 15 other species of fungi (Schmitz, 1948, Eisfelder, 1956, Disney & Evans, 1978).

Megaselia impolluta (Schmitz)

Eight from *Pluteus minutissimus* in August, from Warren Wood. Previously reared from *Pluteus umbrosus* (Colyer, 1954) and a rotten *Pleurotus* sp. (Disney & Evans, 1979).

Megaselia lutea (Meigen)

38 from *Russula vesca* in June and July, from Honingham Fen (63/0911); and nine from *Russula lepida* in September and October, from Lenwade Pits (63/1018). Previously reared from 36 species of fungi, including these two (Schmitz, 1948, Eisfelder, 1956, Buxton, 1961, Disney & Evans, 1979).

Megaselia nigra (Meigen)

121 from *Agaricus campestris* in August, from Welborne (53/0609). Previously reared from this species and *A. bisporus* (Wood, 1914, Schmitz, 1948, Brauns, 1950, Colyer, 1954, Hussey, 1950, Robinson, 1978); from *Coprinus comatus* (Malloch, 1912) and *Boletus* (Chandler, 1978).

* Malham Tarn Field Centre, Settle, North Yorkshire, BD24 9PU.

**Chanterelle, Church Road, Welborne, Near Mattishall, Norfolk, NR20 3LH.

Megaselia pygmaeoides (Lundbeck)

Five from *Russula nigricans* in September, from Honingham Fen. Previously reared from this and 17 other species of fungi (Eisfelder, 1956, Buxton, 1961, Disney & Evans 1979).

Discussion

The rearings from *Amanita excelsa*, *Peziza micropus*, *P. varia*, *Pluteus minutissimus* and *Thelephora terrestris* are the first records of named species of scuttle fly breeding in these fungi. *Conicera similis* (Haliday) is the only named Phorid previously reported from *Pluteus cervinus* (Schmitz, 1948) and *M. flavicans* has not previously been reported from *Amanita excelsa*.

Acknowledgement

One of us (R.H.L.D.) is grateful to the Shell International Petroleum Co. Ltd. for a grant to further studies of Phoridae.

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MACROLEPIDOPTERA OF AN UPLAND AREA IN KIRKCUDBRIGHTSHIRE, SOUTH-WEST SCOTLAND

By Dr. P. D. HULME*

Kirkcudbrightshire forms part of the Dumfries and Galloway Region. The lepidoptera in this Region, as in many other areas of Scotland, are under-recorded. There is, therefore, plenty of scope for lepidopterists to work there, especially as the variety of habitat is, perhaps, unrivalled by that of any other area of comparable size 'north of the border'. The main lepidoptera accounts for the Region list species taken around Almorness, Kirkcudbrightshire (V.C. 73) (Robinson, 1870-71), Gatehouse-of-Fleet, Kirkcudbrightshire (Russell, 1944) and Corsemalzie, Wigtownshire (V.C. 74) (Gordon 1913, Gordon 1919).

From October 1970 to July 1973 I worked for a few days each month on the Silver Flowe National Nature Reserve and stayed at Mid Garrary (10 km west of New Galloway, Kirkcudbrightshire) a field station of the Department of Plant Biology, University of Hull. The field station is within Clatteringshaws Forest, and the Silver Flowe N.N.R. lies along the north-west edge of the Forest. Much of my spare time was spent recording macrolepidoptera within this area. At Mid Garrary I ran a light trap which at first had an ordinary 150w tungsten bulb and from 1971 a mercury blended tungsten bulb.

This block of upland country lies above 600ft (183m) O.D. and is composed predominantly of peatland, moorland and Forestry Commission plantation. At the time of the survey there were extensive unforested areas grazed by sheep but now most are planted with conifers. However, the deep peat of the Silver Flowe and the steeper slopes of hills remain unforested and sheep are now confined to one small-holding. The plantations contain species of pine (*Pinus*), larch (*Larix*) and spruce (*Picea*). Relatively few scattered broad-leaved trees and large bushes grow in the area. These are mainly birch (*Betula pubescens* Ehrh.), hawthorn (*Crataegus monogyne* Jacq.) and eared willow (*Salix aurita* L.). Around Mid Garrary and the near by Garrary Burn there are a few naturally growing sessile oaks (*Quercus petraea* (Mattuschka) Liebl.) and several, possibly planted, aspens (*Populus tremula* L.) and rowans (*Sorbus aucuparia* L.). Many of the species listed below are tree feeders and some are present as a result of tree planting, for example, *Thera obeliscata*, *Semiothisa liturata* and *Eupithecia lariciata*. On the moorland and drier peatland areas the vegetation is dominated by purple moor-grass (*Molinia caerulea* (L.) Moench), heather (*Calluna vulgaris* (L.) Hull), cotton-grasses (*Eriophorum vaginatum* L. and *E. angustifolium* Honck.), deer-grass (*Trichophorum cespitosum* (L.) Hartm.) and sweet-gale (*Myrica gale* L.), while on the wetter peat areas bog mosses (*Sphagnum* spp.) are dominant.

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The nomenclature and order of this list follows the check list of Kloet and Hinks (1972).

I am grateful to R. M. Palmer and Dr. M. R. Young for genitalia dissections of *Amphipoea* spp. and *Eupithecia* spp. respectively and for identifying a number of other species, and to my wife for typing the manuscript.

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HEPIALIDAE

Hepialus humili (L.), *H. fusconebulosa* (De Geer).

PIERIDAE

Pieris napi (L.).

NYMPHALIDAE

Aglais urticae (L.), *Inachis io* (L.), *Boloria selene* (D. & S.).

SATYRIDAE

Erebia aethiops (Esp.), *Coenonympha pamphilus* (L.), *C. tullia* (Mull.).

LASIOCAMPIDAE

Poecilocampa populi (L.), *Lasiocampa quercus callunae* (Palm.), *Macrothylacia rubi* (L.).

SATURNIIDAE

Saturnia pavonia (L.)

GEOMETRIDAE

Scopula ternata (Schr.), *Xanthorhoe designata* (Hufn.), *X. munitata* (Hubn.), *X. montanata* (D. & S.), *Epirrhoe tristata* (L.), *Entephria caesiata* (D. & S.), *Cosmorhoe ocellata* (L.), *Coenoteaphria salicata* (Hubn.), *Eulithis testata* (L.), *E. pyraliata* (D. & S.), *Chloroclysta miata* (L.), *C. citrata* (L.), *Thera obeliscata* (Hubn.), *Colostygia multistrigaria* (Haw.), *C. pectinataria* (Knoch), *Hydriomena furcata* (Thunb.), *H. ruberata* (Frey.), *Rheumaptera hastata* (L.), *Epirrita autumnata* (Borkh.), *Operophtera brumata* (L.), *Perizoma alchemillata* (L.), *P. didymata* (L.), *Eupithecia satyrata* (Hubn.), *E. subfuscata* (Haw.), *E. nanata* (Hubn.), *E. lariciata* (Frey.), *Semiothisa liturata* (Clerck), *Petrophora chlorosata* (Scop.), *Opisthograptis luteolata* (L.), *Selenia dentaria* (Fab.), *Odontopera bidentata* (Clerck), *Crocallis elinguaris* (L.), *Apocheima pilosoria* (D. & S.),

Biston betularia (L.), *Agriopis aurantiaria* (Hubn.), *A. marginaria* (Fab.),
Alcis repandata (L.), *Ematurga atomaria* (L.), *Bupalus piniaria* (L.),
Cabera exanthemata (Scop.), *Hylaea fasciaria* (L.).

SPHINGIDAE

Laothoe populi (L.).

NOTODONTIDAE

Phalera bucephala (L.), *Cerura vinula* (L.), *Eligmodonta ziczac* (L.),
Pheosia gnoma (Fab.).

LYMANTRIIDAE

Orgyia antiqua (L.).

ARCTIIDAE

Nudaria mundana (L.), *Parasemia plantaginis* (L.), *Diacrisia sannio* (L.),
Spilosoma lubricipeda (L.), *Phragmatobia fuliginosa* (L.).

NOCTUIDAE

Ochroleptura plecta (L.), *Noctua pronuba* (L.), *N. comes* (Hubn.),
Paradiarsia glareosa (Esp.), *Lycophotia porphyrea* (D. & S.),
Diarsia mendica (Fab.), *D. rubi* (View.),
Xestia baja (D. & S.), *X. castanea* (Esp.), *X. sexstrigata* (Haw.),
X. xanthographa (D. & S.), *Cerastis rubricosa* (D. & S.),
Lacanobia biren (Goeze), *Ceramica pisi* (L.), *Cerapteryx graminis* (L.),
Orthosia gracilis (D. & S.), *O. incerta* (Hufn.), *O. gothica* (L.),
Mythimna impura (Hubn.), *Aporophyla nigra* (Haw.), *Xylena vetusta* (Hubn.),
Blepharita adusta (Esp.), *Antitype chi* (L.), *Acronicta psi* (L.),
Euplexia lucipara (L.), *Phlogophora meticulosa* (L.), *Hyppa rectilinea* (Esp.),
Apamea monoglypha (Hufn.), *A. epomidion* (Haw.), *A. remissa* (Hubn.),
Oligia fasciuncula (Haw.), *Mesapamea secalis* (L.), *Photodes minima* (Haw.),
P. pymina (Haw.), *Amphipoea lucens* (Frey.), *A. crinanensis* (Burr.),
A. oculatea (L.), *Hydraecia micacea* (Esp.), *Celaena haworthii* (Curt.),
Diachrysia chrysis (L.), *Plusia festucae* (L.), *Autographa gamma* (L.),
A. pulchrina (Haw.), *A. bractea* (D. & S.), *A. triplasia* (L.),
Phytometra viridaria (Clerck), *Rivula sericealis* (Scop.),
Hypena proboscidalis (L.).

COLEOPHORA TRIGEMINELLA FUCHS AND C. CORACIPENNELLA
 HBN. IN SOUTH YORKSHIRE. — On 17th April 1981 while at Denaby
 Ings, near Mexborough (VC 63), a Yorkshire Naturalists' Trust
 nature reserve, I found two cases of *C. trigeminella* on hawthorn,
 one of them feeding on the unopened flower buds. From these cases
 moths emerged on 11th and 22nd June.

From cases of the '*nigricella* (Steph.)' group, besides *C. cerasi-
 vorella* Packard I was pleased to rear two specimens of *C. coracipen-
 nella*, one from a case on blackthorn collected at Denaby Ings on
 12th May 1981, the moth emerging on 18th June and one from a
 case on hawthorn collected near West Melton on 17th May 1981 which
 emerged on 25th June. I am grateful to Mr. R. Heckford for con-
 firming the identity of my slides of *coracipennella*.

Besides providing the first Yorkshire records for these two
 species these appear to extend considerably the range of what
 seem to be local or under-recorded moths. — H. E. BEAUMONT,
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 SE3 6AN.

COLEOPHORA MACHINELLA BRADLEY:
ITS REDISCOVERY IN ENGLAND,
AND DESCRIPTION.

109

By JOHN R. LANGMAID*

On 15th June 1977 I collected nearly twenty Coleophorid cases from *Achillea ptarmica* in Botley Wood, Hampshire. The larvae continued to feed for a further two weeks and then pupated. Moths emerged during the latter half of July. One of them was larger than all the others and proved, on examination of the genitalia, to be *Coleophora trochilella* Duponchel. The others were identified later the same year as *C. machinella* Bradley by Mr. R. W. J. Uffen after he and Rev. D. J. L. Agassiz has made preparations of the male and female genitalia (figures 1 and 2).

The larval case is 8mm long, made of silk, slenderly cylindrical and trivalved, ochreous-brown, paler caudally. The mouth-opening is at 60° to the long axis, and there is a distinct 'neck'. The larva mines the leaves of the foodplant from underneath, and wanders freely from leaf to leaf.

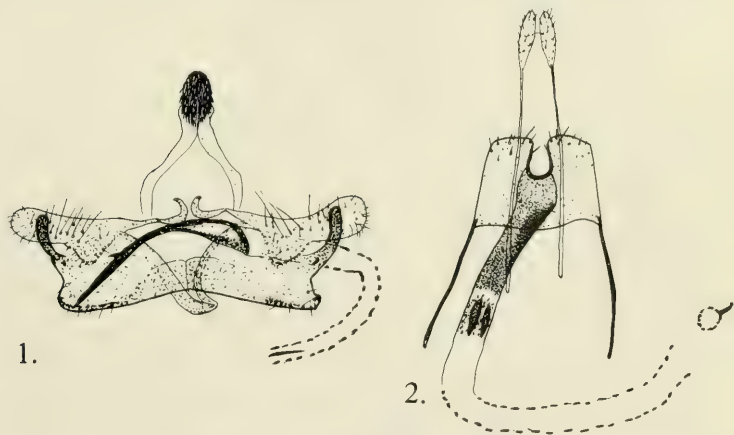


Fig. 1. Male genitalia of *Coleophora machinella* Bradley. Fig. 2. Female genitalia of *C. machinella*.

The moth is similar to *trochilella*, but smaller, with a wingspan of 10-11 mm. Head fuscous, ochreous tinged, paler laterally; antenna white, sharply ringed black; labial palpus whitish above, mixed with ochreous-brown at sides and underneath; thorax and tegula whitish ochreous; legs whitish above, dark fuscous beneath; forewing brownish ochreous, darker toward apex, the male being distinctly darker than the female, a white streak along costa to near apex, veins from cell marked with white streaks toward apex, a

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white streak along fold and another along dorsum to termen, cilia greyish ochreous; hindwing dark grey in the male, paler in the female, cilia grey tinged with ochreous; abdomen dark grey.

The species was originally discovered by the late Mr. W. Machin in the early 1880's bred from larvae feeding on *Artemisia maritima* from saltings on the Thames Estuary, and was named *maritimella*. Subsequently it was placed on the Thames Estuary, and was named *maritimella*. Subsequently it was placed in the synonymy of *trochilella* (Bradley 1966), and then renamed *machinella* after further examination of the genitalia of Machin's specimens (Bradley 1971).

Since 1977 further cases have been found in Botley Wood, and in West Walk, Wickham, Hampshire, from late May to early July. In late July 1977 two specimens were taken flying among *Achillea ptarmica* at Ditchling Common, Sussex, by Lt. Col. A. M. Emmet, and in 1981 Mr. R. Fairclough found cases on Ashted Common, Surrey. In 1980 Mr. Uffen rediscovered the species in North Kent feeding on *Artemisia maritima*. In 1981 moths were bred from this foodplant, and it is notable that they are distinctly paler than those bred from *Achillea ptarmica*. Although the sexual dichroism is also apparent in these, the males are approximately the same colour as the females from *Achillea ptarmica*, and the females are paler still, the forewing ground colour being pale ochreous yellow.

Acknowledgments

My thanks are due to Mr. R. W. J. Uffen for identifying the specimens, and to Rev. D. J. L. Agassiz for the drawings of the genitalia.

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THE DEATH'S-HEAD HAWMOTH AND CONVULVULUS HAWK-MOTH IN KENT IN 1981. — A female Death's-head Hawkmoth (*Acherontia atropos* L.) was seen my sister-in-law's neighbour's garden in Dover, but the latter was too frightened to go near it. Fortunately, however, my sister-in-law recognised it as a moth and put a container over it and called me. The date was the 28th September.

On the same date as the above, a female *Herse convolvuli* L. was brought to my home by a friend who found it alive while working on a building in Folkestone that day. This same friend also brought me another *H. convolvuli*, a very worn male, which he had found on 1st October on the same site in Folkestone. — R. F. BUDDLE, 72, Alfred Road, Dover, Kent.

TWO WEEKS IN THE CANARY ISLANDS IN 1981

By H. G. ALLCARD, F.R.E.S.¹ and ANTHONY VALLETTA, F.R.E.S.²

We met at the new airport, Reina Sofia, in Tenerife on Tuesday, the 1st of September at 1.15 p.m.; though on different flights from different airports, we managed to arrive more or less at the same time at our destination. By 2.30 p.m. we had reached our hotel at Santa Cruz de Tenerife.

Whilst enjoying a cup of tea on the patio, we were greeted by the smallest butterfly, *Zizeeria knysna* Trimen, which was flying in good numbers on the well-trimmed hedges surrounding the lawn. Not much later the largest butterfly *Danaus plexippus* Linnaeus, appeared and was soon followed by another. They both soared and fell and soared again until, tired, they rested on the bougainvillea for a quick drink. As in previous years, we were looking forward to seeing *Catopsilia florella* Fabricius in the hotel gardens, but this time it was absent, though the foodplant, *Cassia didymobotrya*, was still available. Later we noticed that it was also absent from the nearby park where several huge *Cassia* trees were in full bloom and where, in 1979, we had seen so many pupa cases on their defoliated branches and butterflies on the wing. The only other butterfly we saw that afternoon was *Pieris napae* Linnaeus.

2nd September. We paid a courtesy visit to the Director of Icona (National Institute for the Conservation of Nature). He told us that there had been little rain-fall that winter and consequently the vegetation had dried up earlier than usual. We then went to Monte de las Mercedes, 19km from Santa Cruz; there we noticed the complete dryness. The *Cedronella canariensis*, the favourite plant of the butterflies, was in seed and the *Rubus ulmifolius* was in berries. The only butterflies we saw in that locality were *Cyclirius webbianus* Brulle and *Lampides boeticus* Linnaeus. So we drove further on to the road which leads to Las Carboneras; here also we were disappointed. All the *Cedronella* that grew near the road had been uprooted to make room for a concrete gutter. Two years previously this road, though dusty and somewhat rough, had been a paradise for *Gonepteryx cleobule* Hubner when the *Cedronella* was available and in bloom. The larval foodplant, *Rhamnus glandulosa*, was still there but the food for the butterfly had totally disappeared. In fact we did not come across a single butterfly until we reached a country house some 2km away where *G. cleobule*, *Colias crocea* Geoffroy, *Pararge xiphioides* Staudinger, *P. rapae* and *C. webbianus* were feeding at garden flowers.

3rd September. We again visited Monte de las Mercedes but as nothing was on the wing we proceeded to Las Yedras. Here, once more, we found that the *Cedronella* had been cut down, especially those plants by the road. Luckily we noticed a spot below a villa

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where a few plants had been spared. We saw a small butterfly resting on a dry thistle and to our delight it was *Thymelicus acteon christi* Rebel, the only skipper found on the island. Two *C. crocea*, very small in size, a single *Pontia daplidice* Linnaeus and a male and female *Maniola jurtina* f. *fortunata* Alpheraky were also seen. All male *G. cleobule* seen that morning had their wings damaged but the females were in very good condition.

4th September. In the morning we explored another locality on the other side of Las Carboneras, below Monte de las Mercedes and some 600m above sea level. We could not go far as a landslide had blocked the road the night before. This locality was a good one for Lycaenidae and Hymenoptera; in fact, *C. webbianus*, *Lycaena phlaeus* Linnaeus *Aricia cramera* Eschscholtz and *L. boeticus* were quite common on the *Mentha pulegium*, *Satureja nepeta* and *Echium plantagineum*. Looking down a ravine, we noticed that the *Cedronella* was still in bloom and that several *G. cleobule*, mostly females, were patronising the flowers. In this locality we found several caterpillars of different sizes on *Teline microphylla*; they had short hair and were greyish black with a greenish dorsal and a yellow lateral stripe. We took a few that were fully grown and after a few days they formed silken cocoons covered with their own excreta. The moths started emerging on the 7th of October and turned out to be *Uresiphita limbalis* Denis & Schiffermuller.

5th September. As in former years, we did not want to miss a visit to Puerto de la Cruz, if not for the butterflies at least for the ever-changing panoramic view from the coach all along the 38km journey. After a two-hour drive through hamlets, small towns and many banana groves, we reached our destination. We passed through Taoro Park, or rather what was once a park as now it is a parking site and sports centre. Still, *D. plexippus* and *C. florella* were flying in the gardens. We again saw *Z. knysna* flying over a vetch and on another half-dry leguminous plant two *L. phlaeus* tried to sip what they could from the remaining flowers. We went to an hotel for a cup of coffee and in the garden we saw *Pieris cheiranthi* Hubner resting on the only nasturtium (*Tropaeolum majus*), a plant which in previous years had covered the whole area; then pupae of this butterfly had abounded on the nearby walls and the empty cases were still to be seen. We waited briefly until the butterfly left the plant and to our delight found a cluster of newly laid eggs on the underside of a leaf. *C. florella* and *D. plexippus* were in good numbers by the swimming pool. We had a look at the *Cassia* trees and found two larvae of the former. One, which was quite big, pupated on the 10th and the butterfly emerged on the 19th, a female of the whitish form. The other was much smaller and, after being fed on *Cassia* taken with us to England, pupated on the 21st; the butterfly emerged on the 4th of October, having taken longer in the pupal stage owing to the difference in climate.

6th September. Senor M. Morales Martin and his son drove us in their car to parts of the island we had not visited so far and where small colonies of *G. cleobule* were still thriving. We visited Las Vueltas de Taganana and went down to Culuzo del

Tejo at the very northern tip of the island. We returned to Santa Cruz taking the road from El Bailadero to San Andres, an area mostly barren except for several species of *Euphorbia*, hoping to come across *Danaus chrysippus* Linnaeus which we had not encountered during our visits in 1977 and 1979. We were very grateful to our friends for, besides providing the enjoyable drive, they pointed out to us places like isolated hamlets and the Dutch village, accessible only from the sea, which we would never have located on our own.

GOMERA

In 1979 we visited the island only for a couple of hours as no accommodation was obtainable. This time, a week later, rooms were available and we were happy to spend two fruitful days on this wonderful island.

7th September. The ferry reached San Sebastian, the port and capital of Gomera, at 11.25 a.m. Luckily we found the same taxi driver whom we had hired two years before and who knew what we were after. We checked in at the hotel and then drove straight to El Cedro where the forest which registers most of the rainfall provides the right habitat for the flora and fauna. We wanted to visit an area further north of La Laguna Grande, where on our last visit we had found a mass of butterflies, especially *G. cleobule*, feeding on a carpet of *Cedronella*. To our surprise, all the flowering plants had been uprooted and heather trees planted instead. Thus the ecology of the area had completely changed and, with no flowers at hand, the butterflies and other insects had had to move elsewhere. This being so, we drove down to El Cedro. Here, unlike those in Tenerife, the *Cedronella* was still in bloom in shady localities. It was not long before *G. cleopatra cleobule* started flying out of the forest in search of the flowers; females were predominant that morning and most of the males had passed their best. *Pandoriana pandora* Denis & Schiffermüller was frequently seen crossing the road at a considerable height and the few that settled were seen to be badly worn. As in Tenerife, *C. webbiana* and *L. boeticus* were very common and very small. A few battered female *M. jurtina* f. *fortunata* were still on the wing and we saw two *C. crocea*, one *P. daplidice* and several *P. xiphioides*. The only moths we came across were *Macroglossum stellatarum* Linnaeus hovering over the flowers; they seemed quite fresh.

8th September. After a restful night we were ready for another visit to El Cedro. The sky was overcast and the weather discouraging. Two years previously we also experienced this type of weather and it had gradually cleared up; so we decided to go ahead. Fortunately the same thing happened and by 11.30 a.m. the clouds had drifted away and the sun was shining brightly. This time more male than female *G. cleopatra cleobule* were seen and most of them were quite fresh. This variation in the condition of specimens could arise from there being two broods, but a more likely explanation is that the adult life-span of *Gonepteryx* species is rather long and, since the

females vary in their time of leaving hibernation and egg-laying, the emergence of the butterflies is prolonged. Derry & Derry (1979), who visited Tenerife and Gomera in July, two months ahead of us, also encountered worn and fresh imagines. All the other species seen on the first day were on the wing again with the addition of *A. cramera* and *P. xiphioides*. We saw very few other insects as the season was almost over. *Bombus terrestris canariensis* Perez, *Cerceris concinna* Brulle and *Podalonia tydei* Le Guillou were still on the wing, the same species as we had seen in 1979, but in smaller number.

In the evening we caught the ferry back to Tenerife and returned to our hotel at Santa Cruz.

9th September. We spent a restful day at the hotel evaluating what we had seen and enjoyed most in Gomera.

10th September. We chose a different locality on the mountains, Pico del Inglis, but as it was windy we moved to a lower and more sheltered place where some wild plants were still in bloom. We waited and waited for butterflies to appear. The only sign of life, besides the isolated chirping of some birds, was an unusual number of large dragonflies (*Anax* sp.) parading up and down the smooth road. They came very close to us but not within our reach. Naturally they were after food, but, not being close to water, it was not easy to find any. At last, as a male *G. cleobule* flew down from the forest, its golden wings shining in the sun, down dived one of these predators, snatched it with its legs and mouth and tried to fly away to the nearest tree. It was not so easy as in its efforts to escape the butterfly kept flapping its wings and pulling down the unkind snatcher. Both whirling in the air, they soon disappeared among the trees. We moved further on but there were still no butterflies so we concentrated on smaller fry. Beating the vegetation, we disturbed several micros, *Agriphila trabeatellus canariensis* Rebel and *Endotricha rogenhoferi* Rebel, both endemic, *Pyrausta amata* Scopoli, *Psara bipunctalis* Fabricius, *Pselnophorus albiodyctylus* Milliere and *Crombrugghia laetus* Zeller. *B. terrestris canariensis*, *P. tydei* and *Anthidium manicatum* Linnaeus were quite common.

LA PALMA

11th September. La Palma is the most westerly of the Canary Islands. Its area is 730 sq.km. and it is extremely rugged with the highest peak at 2483m. Laurel forests dominate the more northern slopes. Our flight took 20 minutes: On arrival at Santa Cruz de la Palma, we went straight to San Miguel Hotel which offers a fine view of the city, its harbour and bay, as well as the imposing mountains which encircle it. Taking a taxi, we drove north-eastwards to the forestal area of the island where we hoped to see *Gonepteryx palmae* Stamm and *P. cheiranthi*. The journey uphill took just one hour round many awkward and dangerous bends, but as we were in the hands of an expert driver it was enjoyable. This island was the greenest of the three we had so far visited. All sorts of trees and bushes, evergreen and deciduous,

decorated the road; *Lantana*, *Nicotiana*, *Ricinus* etc. were everywhere; higher up, peach and chestnut trees loaded with still unripe fruit were plentiful, while there were banana plantations at a lower level on the slopes of the ravines. Every cottage on the route provided a colourful garden with the flowers of the season, *Hibiscus*, *Plumeria* and morning glory adding further attraction. However, we were too late in the season to see many wild flowers, although a few were still in bloom in the forested area. It was some time before the butterflies started to appear; they were high up in the almost vertical slopes of the wooded mountains and unless the sun shone they would not fly out. It was an exciting moment when the first *P. cheiranthi* came down from such a height, floating freely with spread wings showing the large black spots on its forewings. *G. palmae* followed, floating down rather more quickly. *P. xiphioides* was still on the wing with females predominating. *C. webbianus* flew from flower to flower and they seemed larger than those from the other islands. We saw one *C. crocea*, a couple of *P. pandora* and a single *Vanessa indica vulcania* Godart. Two battered *M. jurtina* f. *fortunata* patrolled a stretch of ground all the time. As in the other islands, *P. rapae* was the most common butterfly. Other insects seen that day were *B. terrestris canariensis*, *Paravespula germanica* F. and the ubiquitous *Apis mellifera* L.

12th September. We visited the same place again as we assumed it was the best location for the time of year when most of the wild flowers were over; moreover, other areas were inaccessible owing to a lack of roads and tracks. It was not until 1.00 p.m. that we had a sunny period; during that short spell several *P. brassicae cheiranthi*, mostly worn males, flew down to the flowers together with a single *G. palmae*. By 3.45 p.m. it was getting cold so we went straight to the airport for the flight back to Tenerife.

We were puzzled by the presence of *P. cheiranthi* as no nasturtium, the principal foodplant of the caterpillar, was growing in the thick forest or nearby. This suggests an alternative foodplant. We also noticed that the La Palma butterflies lacked the subcostal black spots on the underside of the forewing characteristic of those in Tenerife. This suggests some biological difference between the stock of the two islands.

13th September. A dull, rainy day kept us indoors after the two energetic days at La Palma.

14th September. Again a dull day. In the afternoon we drove to the fountain, Fuente Joco, at a height of 1900m where on our two previous visits we had seen *Pseudotergumia wyssii* Christ in good numbers. As this butterfly is active in dull weather and both early morning and late afternoon, we hoped to get a glimpse of it before our departure. Much to our dismay, not only was the butterfly absent but the fountain too was not in its former state; there had been no water running all the summer and it had been tampered with by an irresponsible person. The bees and wasps which had buzzed round our mouths two years before when we tried to drink had all gone: desolation reigned. So we drove down to Cumbo de Arafo at 1600m. Though already late in the afternoon, *A. cramera*,

L. phlaeas and *C. webbianus* were still flying. Turning over some stones, we found the largest earwig in the island, *Annisolatus maxima* Brulle, several beetles, mostly *Heteger transversus* Brulle, and the staphilinid *Creophilus maxillosus* spp. *canariensis* Bernhauer. We also disturbed the common grasshoppers *Aiolopus strepens* Latreille, *A. thalassinus* Fabricius, *Calliptamus plebeius* Walker, *Ariagona margaritae* Kr. and a *Plalycleis* species.

15th September. We returned to England, both satisfied with our enjoyable and fruitful holiday on the three picturesque islands we had visited.

We would like to record our grateful thanks to Dr. A. Machado and Senor M. Morales Martin for their warm hospitality and great help. For a full bibliography see Allcard & Valletta, 1978 and 1981.

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MOMPHA LACTEELLA STEPHENS: A POSSIBLE DISTINGUISHING CHARACTER. — I recently dissected a *Mompha* which I had suspected might be *lacteella* and this proved to be the case. I took it on 5th. June 1976 in the late afternoon at Lutton, Devon. It was in good condition, sitting on a leaf of *Corylus* at the edge of a cornfield. There was no evidence anywhere in the area of *Epilobium hirsutum*, the foodplant given by Emmet (1979, *A field guide to the smaller British Lepidoptera*).

Lacteella is very similar to *propinquella*. In his key to the genus *Mompha*, Meyrick (1928, *A revised handbook of the British Lepidoptera*) separates the two on the colour of the thorax and basal blotch. He describes this as being ochreous-white in *propinquella* and pale ferruginous-ochreous in *lacteella*, a distinction which I find hard to interpret.

I have bred several *propinquella* and fresh specimens appear to have the thorax and basal blotch the same colour as *lacteella*. However his description of *lacteella* states "thorax pale ferruginous-ochreous, anteriorly sprinkled dark fuscous." Mr. S. N. A. Jacobs' coloured figure (1945, Wakely, Notes on the genus *Mompha*. *Proc. Trans. S. Lon. ent. nat. Hist. Soc.* 1944-45: 81-84, plt. V) shows this on the tegulae in his illustration of *lacteella*. In my specimen the tegulae are very strongly marked anteriorly with the blue-black ground colour of the forewings. None of my *propinquella* has such markings.

As I have only one specimen of *lacteella* I do not know whether this is a good character for separating the two species. I would welcome others' observations. — R. J. HECKFORD. 67, Newnham Road, Plympton, Plymouth.

NOTE ON *PACHYNEMATUS ARCTICUS*
(LINDQVIST) (HYMENOPTERA,
TENTHREDINIDAE)

117

By ANDREW D. LISTON*

An excursion to Ben Heasgarnich (1076m), Perthshire, made by Mr. J. M. Nelson and the writer on 24.-25.6.1981 yielded only five sawfly specimens, one being of great interest. Collecting commenced on the evening of the 24th on the high slopes of Heasgarnich (ca. 900m.) in an area of heavily grazed *Festuca-Vaccinium* grassland. *Dolerus aeneus* Hartig was the only sawfly encountered here (1 male, 1 female). On the summit, *Salix herbacea* L. formed large patches amongst the snow-influenced vegetation. Numerous leaves bore young galls of *Pontania crassipes* Thomson, and one adult female of this species was collected together with a male *Pristiphora staudingeri* (Ruthe). Both *crassipes* and *staudingeri* are arctic-alpine Nematinae, occurring on many of the higher Scottish hills.

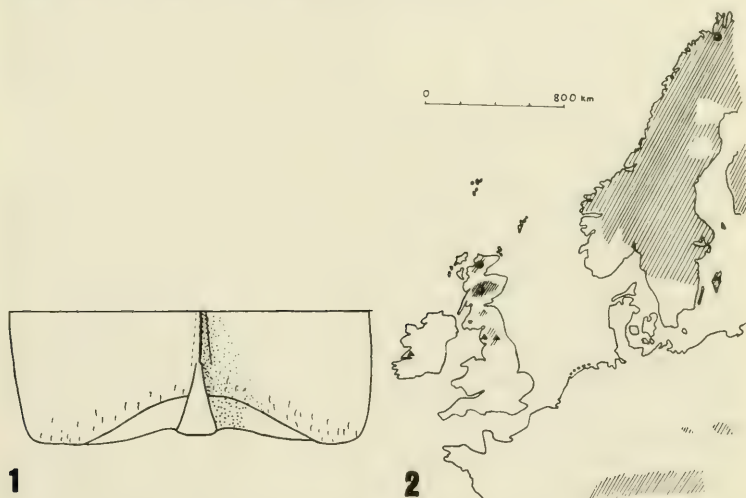


Fig. 1. 8th tergite of male *Pachynematus arcticus* (Lindqvist).

Fig. 2. European distribution of *Pachynematus arcticus* (dots), *Potentilla crantzii* (shading) and *Potentilla fruticosa* (triangles).

Early in the morning of the 25th we investigated the fauna of the ungrazed ledge and steep-face herb communities on the south-facing crags of Ben Heasgarnich. The rock is calcareous Dalradian schist and because of this, the dominant plants are montane calcicoles such as *Dryas octopetala* L., *Salix reticulata* L., *Vaccinium uliginosum* L. and *Potentilla crantzii* (Crantz) Beck. Prolonged searching of many patches of *Salix reticulata* revealed no *Pontania* galls, but this was no surprise since the only gall-maker occurring on it has not been recorded in Britain. Sweeping was generally

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difficult, but on a broad ledge with a rich variety of herbs, a single male of *Pachynematus arcticus* (Lindqvist) was obtained.

P. arcticus is a very slender species only 4-5mm long. Its size and very dark colouration probably often cause it to be overlooked. It was described as *Mesoneura arctica* by Lindqvist (1958) from a male collected by Richard Frey in the alpine zone of Malla Field, north-west Norwegian Lapland in July 1943. Benson (1961) transferred the species to *Pachynematus* and recorded that he had caught a male at Inchnadampf, Sutherland. A second male was taken at the same locality by Mr. E. C. Pelham-Clinton a few years later (Benson, 1964).

The venation of the type was abnormal, a frequent occurrence in arctic sawflies, leading Lindqvist to describe it as a *Mesoneura*, a decision which was certainly wrong (Benson, 1961). The male's penis-valve is completely unlike that of any other *Pachynematus*, but more resembles those of certain *Pristiphora* spp. In fact, independently from Benson, Hellen (1960) indicated that *arcticus* was not a *Mesoneura*, but a *Pristiphora*. Apart from the penis-valve (Lindqvist, 1958, fig 3; Benson, 1961, fig. 1), the 8th tergite of the male is also closer to the *Pristiphora* type than to a *Pachynematus* (fig. 1). However, the costa is barely expanded at its apex and the clypeus is only very weakly emarginated, both of which are important characters leading to *Pachynematus* rather than *Pristiphora* in Benson's (1958) key.

Lindqvist (1970) described *Pachynematus incisus* on the basis of two females reared by Wershutskij from *Potentilla fruticosa* L. near Irkutsk in the Baikal region of Siberia. Wershutskij's collection of Siberian Nematinae, sent to Lindqvist for identification, also contained a male *P. arcticus* (Lindqvist, 1972). These two papers should be consulted for descriptions and figures of the female *arcticus* (= *incisus*), which possesses a distinctive sawsheath resembling those of certain *Pristiphora*.

The rearing of the female *arcticus* from *Potentilla fruticosa* (Rosaceae) is also most interesting and remarkable. Other groups of Palaearctic *Pachynematus* are associated chiefly with Gramineae, Cyperaceae and Coniferae, with only a couple of species feeding on Salicaceae and Polygonaceae. The association of *arcticus* with Rosaceae is once again reminiscent of *Pristiphora*. I suspect that in Europe the larva of this species should be looked for on *Potentilla crantzii* (Alpine Cinquefoil), a local arctic-alpine plant whose British stations include both localities where the *Pachynematus* has been found.

More information on the biology and distribution of *arcticus* would be valuable in resolving its generic position. At present, it is best retained as a distinctive species-group within *Pachynematus*. It is possible that it has been consistently overlooked because of its unusually late flight season.

Figure 2 shows the known European distribution of the sawfly and its probable foodplants.

Acknowledgement

I thank Mr. J. M. Nelson (Nature Conservancy Council, Edinburgh) for arranging our visit to Ben Heasgarnich.

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Notes and Observations

A STRANGE CASE OF LARVAL DEPRAVITY. — 1981 was not the most productive season I can remember as the half-filled setting boards in my drying-cabinet will testify, but imagine my anger when perusal of these boards late in September revealed damage to many of the specimens. I searched diligently for the tell-tale exit holes and small piles of minute frass that betrays the presence of *Anthrenus museorum*, the 'Collectors-friend'. Instead of the characteristic dry powder I found large, moist pellets of a lepidopteran origin. Minute examination revealed the half-inch long culprit. The larva, a noctuid, was dining out at the expense of his deceased brethren, so I confined his attentions to a large corpse of *Hyloicus pinastri* Linn., upon which he fed until pupation in late November.

I was rewarded for my labours on 26 February this year with the emergence of a fine, though rather dark, example of *Caradrina clavipalpis* Scop. I believe this is the first time that a noctuid larva has been reared exclusively upon a diet, although the habit is well established amongst some of the Oecophoridae, namely *Hoffmanophila pseudospretella* Stt., and *Endrosis sarcitrella* Linn. — MARK HADLEY, 2 Thompson Street, New Bradweel, Wolverton, Bucks.

PHYLLONORYCTER SAPORTELLA (DUPONCHEL) (HORTELLA FABRICIUS) IN EAST NORFOLK. — On the 8th of November 1981 my wife and I were making records in the Redgrave-Lopham area, where vice-counties 25, 26, 27 and 28 meet. There are fine roadside oaks on which I have found eight species of nepticulid, including the local *Ectoedemia quinquella* (Bedell). On this occasion, however, we were searching for *Caloptilia* cocoons; the early stages of *C. alchimiella* (Scopoli) and *C. robustella* Jäckh seem to be indistin-

guishable and I wanted to rear adults for recording purposes. At approximately TM 047802, just inside VC27, I picked several cocoons, one on a leaf which also bore a *Phyllonorycter* mine. The leaves were overwintered in a nylon stocking lying on the ground and were under snow during the severe weather. I brought them indoors on the 11th of February and four *C. robustella* emerged between the 9th and 13th of March. The *Phyllonorycter* mine produced a female *P. saportella* on the 26th of March.

This is apparently the first example of this species to be obtained in Britain since May, 1949, when Mr E. C. Pelham-Clinton found two adults on tree-trunks in Cambridgeshire, one near Madingley and the other near Gamlingay. In *The Field Guide* we stated "Not recorded in recent years" and this has not been contradicted. It has been suggested that the mines are seldom found because they occur high up on the oaks; that may sometimes be the case but this one was within easy reach.

The mine is situated on the margin of the leaf extending inwards from the tip of a lobe, the leaf-edge being completely folded over so as to conceal it. The lower epidermis is therefore almost obscured but appears to have numerous small creases. There is no central green patch on the upper surface because none of the palisade tissue has been eaten right through to the epidermis. The mine somewhat resembles that of *P. heegeriella* (Zeller) but is more strongly folded and is larger, measuring 12mm as opposed to 10mm or less in length. This account tallies with that given by Hering (*Bestimmungstabellen der Blattminen von Europa* 2: 826). For obvious reasons, the feeding was not described by Harper & Langmaid (*Ent. Rec.* 90: 162-166). If my mine is typical, there should be little difficulty in recognising other examples, providing they can be found. The mine is probably the hardest to detect of the oak-feeding *Phyllonorycter* because the pale lower surface is hidden and there is no discoloration on the upper side; at first sight, it looks more like a fold than a mine. I cannot describe the cocoon since I have given the mine unopened to Dr Ian Watkinson who is covering the genus in MBGBI Vol. 2.

Collectors have been searching assiduously but in vain for this species for many years: I bring a single mine home because it happens to be on the same leaf as something else and rear it by accident and unexpectedly. — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF. 28.iii.1982.

MAGDALIS VIOLACEA L. (COL.: CURCULIONIDAE): CORRECTION OF A RECORD. — Although this species has now (probably correctly) been removed from the British list, there is a mid-century published record (G. E. Woodroffe, 1951, *Ent. mon. Mag.* 87: 255) of which I feel it incumbent on me to say something in clarification — in order to set the record straight and because the specimen in question is now in my collection. It was swept from broom at Culbin Sands, on the Moray Firth, 21.vi.51. Subsequent to publication, the late captor — a well-known hemipterist, who gave away most of his coleopterous captures — most kindly presented me with the insect, whose identification, he said, had not been and still was not free

from doubt as between the two closely allied species *duplicata* Germ. and *violacea* L. Some while later I came to the conclusion that the single tenuous British record of the latter species (cf. Fowler, 1891, *Col. Brit. Isle.*, 5:398) was most likely based on confusion with *M. duplicata*, so that probably we did not possess *violacea*; and that the Culbin specimen was in fact a very small *duplicata*. This last species is now known as a regular, though scarce, inhabitant of the Scottish Highlands. — A. A. ALLEN.

BOOK TALK FIVE. — A book of unusual historic interest is Rennie's *Conspectus*; or, to give it its full title, *A Conspectus of the Butterflies and Moths found in Britain*, by James Rennie, Professor of Zoology, Kings College, London, and published in 1832 by William Orr at 7s. 6d. Apart from a title page with a curious engraving of *Papilio machaon* together with its larva and pupa, this minute octavo no bigger than a 12mo and measuring only 150mm x 90mm is unillustrated, but contains 327 pages of small print treating of the entire Order. To a marked extent the book is an epitome of the well known and relatively expensive *Illustrations of British Entomology (Haustellata)* whose author, James Francis Stephens, was engaged in a lawsuit with Rennie for alleged piracy of the *Illustrations* in the *Conspectus*. Although Rennie won the case, many scientific men showed sympathy for Stephens by subscribing to defray the heavy legal costs of the action following his defeat. On page 4, the Wood White is described as *Leucophasia loti* Rennie, a name seemingly overlooked by the authors of that most useful of lists of British lepidoptera viz., "Kloet & Hincks" (1972), but was nevertheless cited in W. F. Kirby's monumental *Synonymic Catalogue of the Diurnal Lepidoptera [of the World]* (1872). At least one author followed the nomenclature of the *Conspectus*, as witness E. H. Burnell in his "List of Lepidopterous Insects found in the Neighbourhood of Witham, Essex", published in 1837 in *Magazine of Natural History*, new series, 1: 601-604.

To those interested in entomological bibliography, the Royal Entomological Society has for sale a limited number of copies (which offer is not restricted to Fellows of the Society) in original wrappers, of G. C. Champion et al. (1893), *Catalogue of the Library of the Entomological Society of London*, pp.i-iv, 1-291; and *Supplement* (1900), pp. i-iv, 1-147. On estimation, the work contains fully 8500 items, and the price per copy (including the *Supplement*) is £1 plus postage, obtainable from the Librarian, 41 Queen's Gate, London SW7 5HU. — J. M. CHALMERS-HUNT.

UDEA DECREPITALIS H.-S. (LEP.: PYRALIDAE) IN WALES. — On 6th June 1978 I was collecting at m.v. light on the banks of a lake near Talybont on Usk, Brecknockshire, Wales (SO 0166). The night was fairly cool and misty and little interest in the way of Lepidoptera visited the lamp apart from *Lampropteryx suffumata* D. & S., *L. otregiata* Metcalf and a pale pyralid moth which I could not immediately identify. Upon setting the moth later I came to the conclusion that the specimen (a male) was probably *Udea decrepitalis* H.-S., but thought the record required confirmation because of the locality. Recently I prepared a genitalia slide from the speci-

men and was convinced that my original identification was correct. This supposition was kindly confirmed by Mr. M. Shaffer of the Department of Entomology at the British Museum (Natural History).

To my knowledge this alpine species has not been recorded before from the British Isles outside Scotland. If I had realised the significance of the record at the time I would have tried to identify the food plant. There were a large number of fern plants growing near the lake but I did not know to what species they belonged. — P. J. JEWESS, Boyces Cottage, Newington, Sittingbourne, Kent ME9 7JF.

NINETEENTH-CENTURY ISSUES OF SMITH AND ABBOT, "THE NATURAL HISTORY OF THE RARER LEPIDOPTEROUS INSECTS OF GEORGIA" (1797). — In an initial study of "Smith and Abbot" (93: 213-218) I suggested that the work had a long printing history, and that its plates (some with new imprints) were available as late as three decades after the original publication. I have since been conducting a census of copies of the entire work to collect additional data.

It has long been known that some copies of the book included plates printed on paper with watermarks dated as late as the 1820s. Preliminary results of my census (based on thirty-five copies at the moment of writing) suggest that copies were made up from the original sheets of text, watermarked 1794, and successive impressions of the plates. Later copies (still with the 1797 title and initial printing of the text) have plates with watermarks dated from 1817 to 1827, and some of these copies include one or more of the original plates with 1794 watermark dates. So "new" copies of the entire "1797" work were being issued as late as 1827 and perhaps later; one of the "R. Martin" plates in the dos Passos set without text, discussed in my paper cited above, bears an 1828 watermark.

Further data could well revise these estimates, and indicate an even more interesting bibliographical history. Hopefully more will be learned about the Martin imprints. A more complete report on the printing of "Smith and Abbot" will appear in time, and I would appreciate hearing from owners of copies I have not examined. — RONALD S. WILKINSON, 228 Ninth Street, N. E., Washington, D. C. 20002.

CACOECEIMORPHA PRONUBANA HBN. (LEP.: TORTRICIDAE): SUCCESSFULLY REARED ON ARTIFICIAL DIET, WITH A NOTE ON ITS DIAPAUSE REQUIREMENTS. — This species is generally polyphagous with a preference for *Euonymus japonica* (Bradley et al., 1973) and West (1982) while detailing some further foodplants, including imported foreign species, has pointed out that local preferences for food may be shown. In October last year I was given some unidentified ova which were laid on Oleander (*Nerium oleander* L.) growing in the London Butterfly House, at Syon Park, Middx. Similar eggs had also been laid on other plants. When these eggs hatched the young larvae resolutely refused to eat the Oleander leaves and those left with no other choice all died. When it was clear that they were not eating, the larvae were offered a choice of cabbage or artificial diet. The larvae immediately started feeding on both these foodplants, fed up and pupated successfully and the

resultant imagines proved to be *C. pronubana*. The artificial diet used was the cabbage formulae normally used for rearing *Pieris brassicae* L. It was formulated and used according to the methods described by Gardiner (1978).

The moths obtained readily paired and the next generation was again reared on the diet or on cabbage. For convenience it was found that the moths readily oviposited on the sides of 60 ml plastic vials, into the bottom of which freshly-made diet could be poured. For ease of starting these very small larvae, it was found advisable to roughen the surface of the set diet by intensive scratching with a large needle, which was the most convenient instrument to use. The larvae were then changed onto fresh diet when they reached their final instar. At a temperature of 20-25°C the total development period was six weeks, with no difference between the natural food-plant, cabbage, or the diet-fed larvae. Most of the larvae were kept under a photoperiod of 18 hours light, 6 hours dark per day. A number however were kept on a 12 hour light 12 dark regimen and, the imagines not having emerged after two months, can now be concluded to be in diapause, thereby proving that *C. pronubana* has a facultative, light controlled diapause requirement. It is normally (Bradley et al, 1973) a bivoltine species in this country, so this is not perhaps surprising.

I have not previously seen a record of this species from any *Brassica*, and it can now be added to the ever-increasing number of species that can be successfully kept in culture on artificial diet. I suspect that it is not really necessary to use a cabbage-flavoured one however.

References: Bradley, J. D., Tremewan, W. G., Smith, A. (1973) *British Tortricid Moths*. pp 251. Ray Soc., London. Gardiner, B.O.C. (1978) The preparation and use of artificial diets for the rearing of insects. *Ent. Rec. & J. Var.* **90**, 181-184, 267-270, 287-291. West, B. K. (1982) *Cacoecimorpha pronubana* Hbn., (Lep.: Tortricidae): Larval foodplants including damage to *Skimmia japonica* Thunb. *Ent. Rec. & J. Var.* **94**: 38. — B. O. C. GARDINER, UICP, Dept. of Zoology, Downing Street, Cambridge.

THE CHEQUERED SKIPPER: *CARTEROCEPHALUS PALAEMON* PALLAS IN ENGLAND, 1976. — In view of the considerable importance of this Journal as a historical record, may I point out that on the 6th June, 1976, I did see one newly emerged specimen of this butterfly on the site where it had been seen by other observers in 1975. — A. ARCHER-LOCK, 4 Glenwood Road, Mannamead, Plymouth, Devon PL3 5NH.

A FEBRUARY DYTISCUS (COL., DYTISCIDAE). — I have rarely found beetles of this genus in my light-trap and was most surprised to find a female *Dytiscus marginalis* Linnaeus amongst the small catch of 1st/2nd February 1982 in the trap in my Axminster garden. Dr. Anthony Eve, who is collecting records of water-beetles from light-traps, tells me that this species flies mainly on hot nights and that this exceptionally early date is worth publication. — E. C. PELHAM-CLINTON, Furzeleigh House, Lyme Road, Axminster, Devon, EX13 5SW, 22.ii.1982.

WHAT'S IN A NAME? A SUGGESTION. — Having read A. A. Allen's article (*Ent. Rec.*, 94: 4) with interest, I am sure I will not be alone in suggesting the answer to his quiz question is *aprilina*. Why *aprilina* he asks, for an autumn-flying moth? Well, he says himself that some names are atrociously misspelt. Could this one really be *aphilina*, without love? If so, we could call him the Un-loved, instead of the Merveille du Jour. In any case why "du Jour"? He flies at night! — A. J. SHOWLER, 12 Wedgwood Drive, Hughenden Valley, High Wycombe, Bucks.

THE RED ADMIRAL ON THE WING IN DECEMBER 1981. — On December 26, at 11.15 AM. GMT., a dull cold morning, with the temperature a little above freezing, following two weeks of arctic weather, I saw a specimen of *Vanessa atalanta* (Linn.) fluttering on the outside of my conservatory window. On February 6, a fairly mild day, I saw the Peacock Butterfly, *Inachis io* (Linn.) on the wing in my garden. — S. C. S. BROWN, 158 Harewood Avenue, Bournemouth, Dorset.

NEW HOSTPLANT RECORDS FOR *CIONUS HORTULANUS* (GEOFF.) (COL., CURCULIONIDAE) AND *CHRYSOLINA FASTUOSA* (SCOP.) (COL., CHRYSOMELIDAE). British species of the genus *Cionus* typically feed on species of *Scrophularia* and *Verbascum* (Scrophulariaceae), but their ability to colonise introduced species of *Buddleja* (Buddlejaceae) is well known (Read, 1977, *Entomologist's Gaz.*, 28 : 183-202). In 1937 Scott (*Entomologist's Mon. Mag.*, 73 : 29-34) recorded *Cionus scrophulariae* L. infesting *Phygelius capensis* E. Mey, The "Cape Figwort", at Charlbury, Oxfordshire. I am aware of only one more recent British record of *Cionus* on this South African member of the Scrophulariaceae. G. H. Ashe (1949, *Entomologist's mon Mag.*, 85 : 74) remarks "in my garden" (at Gribblesmead, Colyton, South Devon) "*Phygelius capensis* is regularly devastated by *Cionus* spp". On 5 July 1981 I collected a single female *C. hortulanus* (Fourc.) on *P. capensis* in an herbaceous border of the yard of the disused school at Longtown in the Olchon Valley, Hereford (SO 321 290). E. Milne-Redhead (*pers. comm.*) reports seeing a species of *Cionus* on *P. capensis* in August 1974 on the terrace of the house of Cmdr. R. M. Richards at Caerynwech, near Dolgellau, Gwynedd (SH 7617). Unfortunately he did not take a specimen.

Chrysolina fastuosa (Scop.) is known to feed on Labiatae, especially species of *Galeopsis* and *Lamium* (Freude, Harde & Lohse, 1966, *Die Käfer Mitteleuropas*, 9: 165). In June 1980 I was sent some specimens to identify from the garden of Mrs B. Will at the White Hills of Monymusk, by Inverurie, Aberdeen (NJ 61). *C. fastuosa* was present in such numbers on the labiate *Prunella vulgaris* L. that it became a pest on gooseberry bushes, *Ribes uva-crispa* L. This exemplifies the facility of some insects to accept non-related food plants when locally high populations "eat out" their usual host. *Ribes* spp. are not only in a different family, Grossulariaceae, but also in a different order, Tubiflorae. — R. COLIN WELCH, Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs., PE17 2LS, 19.ii.82.

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HELP WANTED in the production of an Atlas of the Butterflies of the London area. I am preparing a distribution atlas of London's butterflies for the London Natural History Society, intended for publication in 1986. Butterflies are being recorded for each tetrad in the society's recording area, which is a circle of radius 20 miles centred on St. Paul's Cathedral. This circle is defined at intervals by the following places: Tilbury; Brentwood; Harlow; Hertford; Welwyn; St. Albans; Kings Langley; Chorleywood; Charlfont St. Peter; Gerrards Cross; Slough; Egham; Chertsey; Addlestone; Byfleet; Redhill; Limsfield; West Kingsdown and Swanscombe, and contains portions of Essex, Hertfordshire, Buckinghamshire, Surrey and Kent, as well as the entire of Middlesex.

All records of butterflies are invited for these areas for the following periods:

pre-1900; 1900 to 1959; 1960 to 1979; 1980 onwards.

The maps will be prepared using tetrads, (Two by two kilometre squares), as the basic recording units, and records will ideally include a grid reference, date and other relevant comments.

People who have in the past sent butterfly records from the London area to the late Baron deWorms are invited to resubmit the records to me, since many of the late Barons notes have gone missing since his death.

It would be helpful in the case of less common species, if contributors would state any degree of confidentiality they require to be imposed on the relevant records.

Contributions should be sent to Colin W. Plant at the Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

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The Editor would be willing to consider the purchase of a limited number of certain back issues.

CONTENTS

The Immigration of Lepidoptera to the British Isles in 1981, including that of the Monarch Butterfly: <i>Danaus plexippus</i> L. R. F. BRETHERTON and J. M. CHALMERS-HUNT	81
The 'Types' of <i>Maniola jurtina splendida</i> White (Lepidoptera: Satyridae). G. THOMSON	89
The Decline of the Indigenous Macrolepidoptera of Abbot's Wood, East Sussex. M. HADLEY	92
Microlepidoptera: a Review of the Year 1981. Rev. D. J. L. AGASSIZ	97
Additions to the Macrolepidoptera of Yorkshire. S. M. JACKSON	99
Dermaptera from the Gunong Mulu National Park, Borneo. A Correction and an Addition. A. BRINDLE	101
<i>Bucculatrix cidarella</i> Z. (Lep., Lyonetiidae) on <i>Myrica gale</i> . H. N. MICHAELIS	102
Records of Phoridae (Diptera) Reared from Fungi. Dr. R. H. L. DISNEY and R. E. EVANS	104
Macrolepidoptera of an Upland Area in Kircudbrightshire, South-west Scotland. Dr. P. D. HULME	106
<i>Coleophora machinella</i> Bradley: its Rediscovery in England and Description. Dr. J. R. LANGMAID	109
Two Weeks in the Canary Islands 1981. H. G. ALLCARD and A. VALLETTA	111
Notes on <i>Pachynematus arcticus</i> (Lindqvist) (Hym., Tenthredinidae) A. D. LISTON	117
Letter to the Editor	88
Notes and Observations:	
<i>Pyrrhocoris apterus</i> L. (Hem., Pyrrhocoridae) in Dorset. S. C. S. BROWN	96
Foodplant of <i>Coleophora salicorniae</i> Wocke Identified as <i>Salicornia fragilis</i> P. W. Ball & Tutin. N. F. HEAL	103
The Wood White: <i>Lepridea sinapis</i> L. in South Devon. P. J. BAKER.	103
<i>Coleophora trigeminella</i> Fuchs and <i>C. coracipennella</i> Hbn. in South Yorkshire. H. E. BEAUMONT	108
The Death's-head Hawkmoth and <i>Convolvulus</i> Hawkmoth in Kent in 1981. R. F. BUDDLE	110
<i>Mompha lacteella</i> Stephens: a Possible Distinguishing Character R. J. HECKFORD	116
A Strange Case of Larval Depravity. M. HADLEY	119
<i>Phyllonorycter saportella</i> Dup. in E. Norfolk. Lt. Col. A. M. EMMET	119
<i>Magdalis violacea</i> L. (Col., Curculionidae): Correction of a Record. A. A. ALLEN	120
Book Talk Five. J. M. CHALMERS-HUNT	121
<i>Udea decrepitalis</i> H.-S. (Lep., Pyralidae) in Wales. P. J. JEWESS	121
Nineteenth-century Issues of Smith and Abbot, "The Natural History of the Rarer Lepidopterous Insects of Georgia" (1797). Dr. R. S. WILKINSON	122
<i>Cacoecimorpha pronubana</i> Hbn. Successfully Reared on Artificial Diet, with a Note on Diapause Requirements. B. O. C. GARDINER	122
The Chequered Skipper in England, 1976. A. ARCHER-LOCK	123
A February <i>Dytiscus</i> (Col., Dytiscidae). E. C. PELHAM-CLINTON	123
What's in a Name? a Suggestion. Dr. A. J. SHOWLER	124
The Red Admiral in December 1981. S. C. S. BROWN	124
New Hostplant Records for <i>Cionus hortulanus</i> Geoff. (Col., Curculionidae) and <i>Chrysolina fastuosa</i> Scop. (Col., Chrysomelidae) Dr. R. C. WELCH	124
Current Literature	88,100

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A REVIEW OF BRITISH BUTTERFLIES IN 1981

By Dr. C. J. LUCKENS*

For most species of butterfly in Britain 1981 seems to have been a poorer than average year. A fine warm spell in August possibly saved the season from complete disaster, but the indifferent weather which prevailed from late Spring, until late July was probably largely to blame for the general paucity of butterflies. Among the Satyridae, *Maniola jurtina* L. and *Pararge aegeria* L. were exceptions to the general rule and did well nearly everywhere in Southern England. There were particularly good reports of *jurtina* from Wiltshire (around Warminster) and several aberrations turned up in this area. In Dorset also, *jurtina* was up to strength, but only average numbers were reported from East Sussex. *P. aegeria* was noticeably common in the Summer brood in Dorset in August, and I saw it everywhere in the scrubby areas of the coastal valleys around Worth and Swanage. This butterfly was also common in Hampshire and Wiltshire, and though the first brood was very sparse in Sussex, the second brood was up to normal strength. *Melanargia galathea* L. also had a fairly good year and has apparently increased its range in the Chilterns recently. In East Sussex however, it was reported to be below average and very local in 1981. The hot weather in August brought out a good hatch of *Maniola tithonus* L. but *Eumenis semele* L. I found very scarce in the Swanage coastal area. It is now very local on the East Sussex downs but in the few sites remaining it produced reasonable numbers. Reports from East Kent suggest that it still possibly occurs on the cliffs between Dover and Folkstone, where its continued presence has been in doubt recently. *Semele* was common, though worn, on the New Forest heathland around Beaulieu and Dibden during the last week of August. *Aphantopus hyperantus* L. has declined markedly in many areas in the South East over the last few years. In mid Sussex, in particular, the reduction has continued and the Ringlet is now very local. A similar situation seems to have occurred in Kent, and, to a lesser extent, in South Hampshire. It was locally common in East Wilts in 1981 with some *arete/caeca* forms turning up in the County.

The commoner *Nymphalidae* such as *Aglais urticae* L. and *Nymphalis io* L. had a patchy year. There were large numbers of the latter on our garden buddleias in Southampton but *urticae* was uncommon, and the temporary residents, *Vanessa atalanta* L. *Vanessa cardui* L., were almost non-existent until very late in the year and then there was a small sprinkling of each species. All recorders remarked on the scarcity of *Polygonia c-album* L. both broods in 1981. *Limenitis camilla* L. was late in appearing but in average numbers in the Wilts woods. In Sussex it apparently had a very bad year with only four to five seen during several hours observation in perviously favourable sites. Of *Apatura iris* L. there were somewhat

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conflicting reports. I saw none in mid-August in the woods on the East Wilts and Hants border (where there has been extensive devastation) and I was informed by one of the wardens that very few had been seen this year. Other reports however, were of numerous sightings in the same area, and also, over the Hampshire border near Romsey, the *iris* was reputedly frequent in at least two woods. The Purple Emperor apparently held its own in the West Sussex woods around Plaistow. It is pleasing that this magnificent butterfly continues to thrive in these areas in spite of vagaries of weather and forestry policy. *Argynnis paphia* L., also the subject of somewhat conflicting reports, was recorded from Wilts as up to strength but late and still flying up to the second week of September. In East Sussex it is local but still present in reasonable numbers around Lewes. In the Plaistow area around fifty could be seen in a few hours' walking. There are no signs of serious decline further West in Devon and South Wales (Breconshire). *A. aglaia* L. had a patchy time, with poor numbers on the downs and woods west of Salisbury; but I saw a fair number in August in the East Wilts woods where the recent felling has harmed *iris* but possibly encouraged this fritillary. *Aglaia* was also plentiful in the Lulworth area of Dorset and in the Grange area in the Lake District. I have virtually no reports of *Argynnis adippe* D. & S. but that it was scarcer than usual in its West Wilts haunts.

In South Hampshire the smaller fritillaries were common in one wood near Fareham which has been coppiced in two large areas and is currently in prime condition for both *Clossiana selene* D. & S. and *C. euphrosyne* L. The latter butterfly was the dominant species of the two, but both were abundant. In contrast, *euphrosyne* was uncommon in Crab Wood west of Winchester and in poor numbers in the Whiteparish area. Further east both continued to decline; particularly *selene*, which may now be absent from Kent and was reported as scarcer than for some years in East Sussex. Moderate populations of both still occur in the West Sussex woods but even here both have declined in the last few years. Further West *selene* tends to do better and in Breconshire is apparently holding its numbers quite well. The parlous state of *Mellicta athalia* Rott. in the West Country where only two colonies apparently now exist, has made it the subject of legislation. In Kent however, good numbers were recorded in mid-June in the Thornden area of the Blean woods. *Euphydryas aurinia* Rott. is impossible to assess on anything other than a strictly local basis. I saw a good number of male Marsh Fritillaries on June 6th in a locality unfortunately threatened with development, near Ringwood. In August there were plenty of larval webs in the same site. Earlier on in mid-April I found several larvae in a riverside locality near Tavistock. I heard however, that *aurinia* was scarcer than usual in some of the Argyllshire coastal colonies.

Hamearis lucina L., formerly common in West Wood near Winchester, has gradually declined over the last few years, but 1981 was the first season I failed to see it there at all. The woods

still look suitable in several places however, and the butterfly might well survive at low density there. In East Sussex and Kent *lucina* was reported as local and rare in 1981. The weather patterns in general favoured the late summer broods of Lycaenidae and several of the blues did quite well in August and September. Happily, this applied to *Lysandra bellargus* Rott. which appeared in good numbers in coastal Dorset, from Swanage westward to Lulworth. I saw this jewel of a butterfly in half a dozen places around Worth during the last week in August and early September. There were also encouraging reports from Kent where reasonably good numbers flew at Queenborough and Detling, though at the Folkestone grounds it was still rather low. There is apparently only one surviving colony in Wilts where it is holding its own, but in the Sussex localities it has declined and *bellargus* was described as local and rare in both broods. In Surrey it occurs near Guildford and here also it appears to have stabilised its position in 1981. *L. coridon* Poda on the other hand, did not share in this modest resurgence and appears to have been relatively uncommon nearly everywhere. I have records from Dorset, Sussex, Wilts and Surrey all painting the same picture of greatly reduced numbers. Only in Kent is it described as fairly common in 1981. This presumably refers to the Folkestone area where it has been low for a number of years and so, perhaps, represents an improvement. I thought the populations near Winchester showed reasonable promise in early August but *coridon* is slowly recovering from a low ebb here since 1977, and I did not expect great things. In the first brood, *Polyommatus icarus* Rott. seems to have been disastrously low in most areas, but in the second brood the numbers were much better. *Aricia agestis* D. & S., on the other hand, was about in fair numbers in both broods, though its congener, *A. artaxerxes* Fab., was reported to be lower in numbers than usual in North West England around Morecambe Bay. Further north in Central Scotland it apparently enjoyed an average year. *Cupido minimus* Fuessl. was still present in early June on St. Catherine's Down near Winchester, where it seems to just hang on year after year; I had only one report of a second brood and that was from Westbury in Wiltshire. *Celestrina argiolus* L. was virtually un-recorded in 1981; I saw a single specimen near Romsey in early May, but none at all in the usual places around Worth Matravers in August. *Thecla quercus* L. seemed very low in the Wiltshire woods in August, and in a favoured Romsey wood I found only small numbers of ova during the Winter. *Thecla betulae* L. on the other hand had the exceptionally fine weather during its flight period, and ova were found in good numbers in the Hampshire and West Sussex localities I visited during December. *Strymonidia pruni* L. I am informed was very late and low in numbers in Northamptonshire. I have no information regarding the colonies around Oxford or from over the border in Buckinghamshire where I found it commonly at the end of June in 1980.

The Spring Pierids were present in good numbers in South Hampshire in late April, but then declined, and the Summer broods

were surprisingly low in spite of better weather. *Pieris brassicae* L. was common at the end of August at the Winspit, however *Anthocharis cardamines* L. benefited from a good spell during its flight period in late April early May, and produced numerous imagines in this area. It showed up early in the season in South-West Surrey also, but in East Sussex the butterflies were very little in evidence though ova could be found easily. In general I believe the Orange Tip did not suffer unduly in 1981. The Brimstone also had an average season throughout the South and unusually good numbers of larvae were reported from mid Sussex. In some cases these virtually defoliated small buckthorns. *Leptidea sinapis* L. was both late and scarce in Salcey forest and a similar situation prevailed in the Durdold area of Surrey. I visited the sea cliffs between Seaton and Branscombe in South Devon in early June and found this delicate butterfly quite commonly on the rough grassy slopes. The last time I had visited these localities was in late July 1967, when several larvae were found on *Lathyrus pratense* but I failed to see imagines. The habitat did not seem to have suffered unduly in the interim. The small wood near Fareham which holds the thriving colonies of fritillaries also provided excellent conditions for *Erynnis tages* L. and *Pyrgus malvae* L. Both skippers were common in the open, coppiced parts of this wood. Elsewhere I have reports only from Sussex where both species were very local and scarce. *Thymelicus lineola* Ochs. continues to increase its range in Southern England, though numbers were not as good as usual in 1981. It was reported from Pewley Down near Guildford for the first time and has appeared recently in several other places in West Surrey where it was previously unknown. Its congener, *T. actaeon* Rott., was common in late August around Swanage and Worth Matravers — especially at the Winspit. It was also reported to have increased in numbers in the Lulworth area in comparison to a previous count in 1979. *Hesperia comma* L. had an unremarkable year though records from the Dover area suggest it is perhaps gaining strength there. It is extremely local in East Sussex (one or two sites only) but, within these limits, produced an average brood in August. I have no data from Surrey, but in Hampshire numbers were maintained fairly well last year. In the West Highlands, *Carterocephalus palaemon* Pall. was in fairly good form last year, particularly in the colonies along the Great Glen. One of the Argyllshire sites was reported to be getting overgrown, but, in general, the butterfly is far more widespread in this area than formerly believed, and new colonies seem to turn up nearly every year.

It is hoped that this report will continue on an annual basis and that in future there will be slightly less bias toward the Southern half of the country. I appreciate that there are many demands on the time and patience of lepidopterists regarding requests for information but I would be grateful if readers could find the time to send me records and general news of butterfly populations in 1982.

I would like to thank the following lepidopterists for their contributions to this paper: Messrs K. N. Baskcomb, R. D. G.

Barrington, R. F. Bretherton, J. M. Chalmers-Hunt, F. Clouter (per J. M. Chalmers-Hunt), R. M. Craske, T. Melling, C. J. Randall (per J. M. Chalmers-Hunt), R. C. Revels, P. Sankey-Barker (per J. M. Chalmers-Hunt), P. Summers.

I owe a special debt to the late Maj.-Gen. C. G. Lipscomb who, only a few days before his death, sent me a detailed report on Wiltshire butterflies.

COLEOPHORA BINDERELLA KOLLAR — A NEW FOODPLANT. — Whilst collecting cases of *Coleophora serratella* L. which were feeding on the roadside *Carpinus* hedge to Finch Wood, Bonnington, Kent, on 21st. May 1981, I noticed a tricolorous case larva also feeding on the Hornbeam. It was reared on Hornbeam from the garden and the moth which subsequently emerged on 9th. July 1981 was referred to the British Museum whereupon Dr. J. D. Bradley kindly confirmed the species as *Coleophora binderella*. As far as I am aware *Carpinus* has not previously been recorded as a foodplant for this species in Britain. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

A NOTE ON TWO BRITISH TRACHYPHLOEUS SPP. (COL.: CURCULIONIDAE). — *T. scabriculus* L.: this is peculiar among our species in possessing a marked sexual difference in the anterior tibiae, one sex having strongly developed tooth-bearing digitate projections at the apex rather as in *T. spinimanus* Germ., while in the other they are almost simple with much smaller teeth. Fowler (1891, *Col. Brit. Isl.*, 5: 184) assigns the smaller teeth to the female, but that is incorrect, as may be easily proved by dissection; the large development of these structures is in fact a female character. Victor Hansen (1965, *Danm. Faun.*, 69: 46) figures them for both sexes. Joy (1932, *Pract. Handb. Brit. Beetles*, 1: 180) makes no mention of a sexual difference; his figure of the tibia (2: 50, fig. 7) is of a male. Consequently a user of the book, unaware that such a disparity exists, might well find himself puzzled.

T. digitalis Gyll.: some coleopterists, both here and abroad*, have tended to look on this as a small form of *T. spinimanus*, and it is on the whole not well understood. The distinctions, not very fully stated in our literature, are slight but appear constant: *digitalis* is always smaller and of shorter form, with less numerous and less erect elytral setae which are much shorter, about twice as long as broad and thus scale-like — in *spinimanus* about four times, and thus bristle-like. The latter decisive character is figured by Hansen (*l.c. supra*: 47, figs. e,f). Further, Mr. J. A. Parry informs me that the spermatheca is quite different in the two species. *T. digitalis* is little recorded with us and is perhaps mostly Kentish. It formerly occurred very sparingly with others of the genus in the chalk pit at Darenth; and I took one at the base of the cliffs at Freshwater, Isle of Wight (v.48), possibly a new locality. It is worth noting that males of *digitalis* are unknown, whilst those of *spinimanus* (known from mountain areas in France) are not found in Denmark (Hansen, *l.c.*: 49) and probably not in Britain. — A. A. ALLEN.

*e.g. R. Frieser in Freude, Harde & Lohse, 1981, *Die Käfer Mitteleuropas* 10: 238.

LEPIDOPTERA IN IRELAND

By the Rev. DAVID AGASSIZ*

In the summer of 1981 my family and I spent our holiday in Ireland: a week in the Burren of Co. Clare, followed by a week each in Tralee, Co. Kerry and Roche's Point, Co. Cork. It was not primarily an entomological trip, but several specimens were taken which seem worth recording. Four years previously I had followed the same tracks spending a week collecting in the Burren with Barry Goater & Dr. John Langmaid, after which I stayed for two weeks at Roche's Point with my family. Records made then have not been published so they are included now. In both visits to the Burren the base was a caravan on Fanore Strand. The precise dates were for the Burren: 6 - 12 August 1977 and 24 - 31 July 1981; for Tralee: 1 - 6 August 1981 and for Roche's Point: 13 - 29 August 1977 and 7 - 13 August 1981.

For Co. Clare I include records of species which are not included by Bradley & Pelham-Clinton (1967), though there may well be other records, published or unpublished. Fanore is abbreviated F., other localities are specified. For one species, *Dichomeris marginella* Fabr. taken at Black Head, 11-vii-77 I have not traced any previous Irish record. Other species are: *Nemophora minimella* D. & S., F. '77, Murrough & Caher River '81; *Rhigognostis annulatella* Curt., F. 25-vii-81; *Agonopterix subpropinqua* Stt., F. bred '81; *Epagoge grotiana* Fabr., Rinnamona '77; *Olethreutes schulziana* Fabr., Rinnamona '77; *Cydia gallicana* Guen., Caher River 30-vii-81; *Scoparia subfusca* Haw., F. '77 & '81 + Black Head '77; *Mecyna asinalis* Hübn., Ballyvaughan & Black Head '77; *Perizoma alchemillata* Linn., F. '81; *Eilema griseola* Hübn., Ballyvaughan '77; *Axylia putris* Linn., Ballyvaughan '77 & F. '81; *Graphiphora augur* Fabr., F. 26-vii-81; *Mythimna pallens* Linn., F. '77 & '81; *Mesoligia furuncula* D. & S., F. & Black Head '77; *Hoplodrina alsines* Brahm, Black Head '77 & F. '81 and *Abrostola trigemina* Werneb., F. '81.

In addition, on both visits *Paraswammerdamia spiniella* Hübn. was recorded and I feel it must be this Blackthorn-feeding species rather than the Birch-feeding *Swammerdamia caesiella* Hübn. which was intended by Bradley & Pelham-Clinton when they recorded the latter.

For the other localities I am including only such vice-county records as are not given by Beirne (1941), these are also supplementary to those I published previously (Agassiz, 1977).

Records from North Kerry (vc. H2), Tralee: *Psychoides filicivora* Meyr.; *Phyllonorycter nigrescentella* Logan — mines; *Plutella porrectella* Linn., *Coleophora benanderi* Kanerva; *Eulamprotes atrella* D. & S.; *Blastobasis lignea* Wals.; *Cnephasia conspersana* Dougl.; *C. stephensiana* Doubl.; *Gypsonoma dealbana* Fröhl.; and *Eurhodope advenella* Zinck.. Also from Kerry Head *Lobesia littoralis* Humph.

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& Westw. and from the Slieve Mish Mountains: *Digitivalva pulicariae* Klim. and *Epinotia mercuriana* Fröl..

Records from East Cork (vc. H5). Two species are not included in Beirne's list so these may be the first Irish records: *Monopis imella* Hübn., Roche's Point 9-vii-81 and *Zeiraphera ratzeburgiana* Ratz. Rostellan 20-viii-77. Other species; all from Roche's Point: *Stigmella aurella* Fabr. '77 & '81; *Phyllonorycter messaniella* Zell. mines '81; *P. rajella* Linn. '81; *Digitivalva pulicariae* Klim. '77 & '81; *Schreckensteinia festaliella* Hübn. '81; *Coleophora discordella* Zell. '77 & '81; *C. trochilella* Dup. '77; *C. benanderi* Kanerva '81; *Hofmannophila pseudospretella* Stt. '77 & '81; *Agonopterix ulicetella* Stt. '77; *A. nervosa* Haw. '81; *Caryocolum blandella* Dougl. '77; *Aproaerema anthyllidella* Hübn. bred '81; *Acompisia cinerella* Cl. '81; *Anarsia spartiella* Schr. '81; *Brachmia rufescens* Haw. '81; *Eupoecilia angustana* Hübn. '77; *Cochylis pallidana* Zell. larvae '81; *Archips podana* Scop. '77; *Clepsis consimilana* Hübn. '77; *Bactra lancealana* Hübn. '81; *Epinotia tenerana* D. & S. '77; *Epiblema roborana* D. & S. '81; *E. scutulana* D. & S. '77; and *Cydia splendana* Hübn. '77.

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ZYGAENA LOTI SCOTICA ROWLAND-BROWN ON MULL, 1981. — On 20th June, 1981, I revisited a locality for *Zygaena loti scotica* on the west coast of the Isle of Mull to which I had not been since the mid-1960s, when I paid three visits. On going to the chief haunt I found to my dismay that the areas of the hillside which were still free from bracken in the 1960s had been completely invaded by this tiresome fern and the flowery areas had completely disappeared. I realised this danger of course, but had hoped that the rock was too near the surface in the flowery areas for bracken to encroach any further. *Z. purpuralis caledonensis* Reiss and *Z. filipendulae* L. were also present in the 1960s. Neither of them could exist there now. I knew of a flowery bank not far away so I made for this spot, and to my great relief I found *Z. loti scotica* flying in good numbers. Their favourite flower was undoubtedly the Fragrant Orchid, *Gymnadenia conopsea* on which I was able to photograph the moth. No other burnets were there — too early no doubt — and the only other lepidoptera seen were a few *Polyommatus icarus* Rott. and *Odezia atrata* L. I went again to the site on 27th June on our return from spending a week on Iona, but all the burnets had gone. The area is very small, and bracken is threatening here too. The slope is steep and the rock is certainly very near the surface; but how long can this tiny colony last? — Rev. J. H. VINE HALL, "Rivendell", 3 The Green, Melmerby, Penrith, Cumbria CA10 1HG.

SYNCOPACMA LARSENIELLA (GOZMANY): A HITHERTO UNDER-RECORDED SPECIES

By R. J. HECKFORD*

As a result of making some genitalia slide preparations in 1981, I discovered that all my specimens of a *Syncopacma* which I had previously determined as *cinctella* (Clerck) in fact were *larseniella* (Gozmany). My specimens came from Cornwall, Devon and Somerset. Goater (1974) does not record *larseniella* from either Hampshire or the Isle of Wight and Emmet (1981) does not record it from Essex, although both record *cinctella*. However neither state whether the records were confirmed by examination of the genitalia.

As I could find little published about *larseniella* I hope that the following note is of some interest.

Stainton (1867), in describing *taeniolella* (Zeller), recognized *ligulella* (*larseniella*) and *vorticella* (*cinctella*) as distinct species, but stated that they were not readily distinguishable from each other. *Taeniolella* differs from both in that the distinct white fascia on the upper surface of forewing extends to the under surface and forms a costal spot on the hindwing.

Meyrick (1928) sank *ligulella* as a synonym of *vorticella*. However Pierce and Metcalfe (1935) showed that *ligulella* was a good species. Wolff (1958) then discovered that the type of *ligulella* in Zeller's collection was a specimen of *vorticella*. He named the now unnamed species *larseniella*. Gozmany was writing a paper on the *Syncopacma* at the time and knew of this. Therefore he named the species *larseniella* (Wolff). However Gozmany's paper was published first, so the species must be named *larseniella* (Gozmany).

Wolff illustrated only the male genitalia of the *Syncopacma* he described because of uncertainty of obtaining correctly determined females. He stated that *larseniella* "can hardly be separated from *vorticella* without examination of the genitalia." I do not have any specimens of *cinctella*, but have compared my *larseniella* with *cinctella* in the British Museum (Natural History) and can find no macroscopic differences.

The two species are readily distinguishable on the genitalia. I have bred both males and females from one small locality and they agree with Pierce and Metcalfe's illustrations of *larseniella*, save in two respects in the male. Wolff's illustrations of the male are more accurate. Pierce and Metcalfe show the pegs at the uncus in two straight lines. Wolff shows them as two diamond shaped groups and my specimens agree with this. Also, Pierce and Metcalfe show the vinculum arms as broad and rounded, but they are long and narrow (as shown by Wolff) although depending on the mounting they can look similar to Pierce and Metcalfe's illustration.

I failed to make a description of the larvae but noted that generally they agreed with Meyrick's description of *taeniolella*. I took several larvae, which were nearly full grown, at three localities at Plympton, Devon between 25th. and 28th. May 1979. They were

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feeding between spun leaves of *Lotus uliginosus*. The adults emerged between 19th. and 23rd. June 1979. It seems that in the wild they emerge later, as the previous year I had taken several adults at one of the localities late in the afternoon on 21st. and 22nd. July.

On 20th. June 1979 I found two larvae between spun leaves of *Lotus uliginosus* at Shapwick Heath, Somerset, whilst on a Nature Conservancy Council survey. These produced two adults on 10th. July 1979. My only specimen from Cornwall was taken at M.V.L. at Saltash on 11th July 1971.

Dr. J. R. Langmaid has since dissected some of his *cinctella* and these have proved to be *larseniella*. They were taken in Hampshire, Petworth, Sussex and Ramsey, Essex. All of those which were bred were taken on *Lotus uliginosus*. Mr. E. C. Pelham-Clinton has one specimen from Hampshire and two females bred from *L. uliginosus* from Fingringhoe, Essex.

I suspect that dissection of many presumed *cinctella* may show them to be *larseniella*. Perhaps *larseniella* is the commoner species. There are now confirmed records of this species from Vice-Counties 2, 3, 6, 11, 13 and 19.

I am grateful to Messrs J. R. Langmaid and E. C. Pelham-Clinton for allowing me to refer to their unpublished records.

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ALOPHORA S. S. HEMIPTERA (FAB.) (DIPT., TACHINIDAE)
 IN VC 69. — On 2 July 1982 I was collecting diptera visiting flowers, mainly Umbelliferae, on the edge of Holker Moss (SD 3579). During my visit I took two specimens of *A. hemiptera*, both females, and saw others but did not catch them. F. I. van Emden (*Handbk. for the Identification of British Insects*, X: Pt. 4 (a): 27) reports *hemiptera* as occurring from Yorkshire southwards. My record is not however the most northerly for Britain as T. H. Pennington (*Entomologist's mon. Mag.* 113: 256) records the species from Stirlingshire and also draws attention to the record by Crowson et al. (*Entomologist's mon. Mag.* 102: 71) of specimens taken in central Ayrshire. — Dr. NEVILLE L. BIRKETT, Kendal Wood, New Hutton Cumbria LA8 0AQ. 28.iv.1982.

OBSERVATIONS ON LEPIDOPTERA IN THE CÉVENNES, EASTER 1981

By J. S. E. FELTWELL, PhD., F.R.E.S., F.L.S., M.I.Biol.¹ and
G. N. BURTON, B.A., F.R.E.S.²

Our study trip to the Cévennes in France (Gard, 30, & Hérault, 34) for the week 11 - 20 April 1981 revealed some interesting observations on larval foodplants, dwarfs, predation and parasitism, and some general notes on butterfly abundance and behaviour.

Foodplants

1. Southern Festoon (*Zerynthia polyxena* D. & S.)

In one riverside mulberry meadow regularly grazed each week by goats, we found about a dozen freshly-emerged Southern Festoons lazily flying about and resting on various plants. The plants in the meadow were very diverse and included: Salad Burnet (*Poterium sanguisorba*), Cowslip (*Primula veris*), Red Clover (*Trifolium pratense*), Spring Cinquefoil (*Potentilla tabernaemontani*), Jack by the Hedge (*Alliaria petiolata*), all of which were in flower, while others like Soapwort (*Saponaria officinalis*) were pushing up. Scattered throughout the meadow were many groups of a very easily overlooked but distinctive member of the Birthworts (*Aristolochia rotunda*) on which the Southern Festoons were ovipositing; ova being laid on both the upper and lower surfaces of the leaves and on the stems. The species was also observed in another riverside meadow, about two miles from the first. It was, again, ovipositing on *A. rotunda*, which was not uncommon in small patches. Almost every leaf had at least one ovum on it and the largest accumulation found was fifteen on one leaf. An effort, on the part of G.B., to rear a limited number of ova proved very difficult and ultimately failed, despite the generous help afforded by Mr. Robert Goodden (Worldwide Butterflies) and Mr. J. S. Keesing (Living Collection Division, Royal Botanic Gardens, Kew). A sufficient supply of *A. rotunda* or *A. clematitis* was unobtainable and other *Aristolochia* spp. were not accepted with any real interest.

2. Morocco Orange Tip (*Anthocharis belia* L.)

Further South, near St. Guilhem-le-Désert, in Hérault, *A. belia* and Cleopatra (*Gonepteryx cleopatra*) were in abundance. Females of *A. belia* were observed ovipositing on the tall but thinly-branched yellow crucifer *Biscutella lyrata*. They seemed to prefer to deposit their eggs on the tightly-closed panicles and fluttered all the time, while depositing their single eggs very quickly. When ova were removed for rearing purposes, it was found that they fed quite happily on one of the normal foodplants of *A. cardamines*, *Sisymbrium officinalis*. We have not found this listed as a foodplant of *A. belia*.

¹Marlham, Henley Down, Catsfield, E. Sussex, TN33 9BN.

²Mar-y-Mar, Minster Drive, Minster, Sheppey, Kent ME12 2MG.

3. Cleopatra (*Gonepteryx cleopatra* L.)

A female of *G. cleopatra* was seen ovipositing on the leaves of an oak species which had already lost its early Spring flowers. We have been unable to identify leaves removed for the purpose and the two ova collected failed to hatch.

4. Fritillaries.

Not many fritillaries were on the wing. Only a single specimen of the Queen of Spain (*Issoria lathonia* L.) and a fair number of Violet Fritillaries (*Clossiana dia* L.) were seen, but a large number of Fritillary larvae were found feeding on the leaves of Ivy-leaved Toadflax (*Cymbalaria muralis*) and Rock Speedwell (*Veronica fruticans*). The larvae continued to feed avidly on *C. muralis* in captivity. Fifteen were reared through to the final instar; two died, eight proved to be parasitised and five pupated safely. The latter emerged in May, proving to be *Mellicta deione* Geyer the Provencal Fritillary. The parasite cocoons and resultant hymenoptera were submitted to Dr. Mark Shaw (Royal Scottish Museum) for identification. They were *Apanteles melitearum* Wilkinson (a regular parasite of *Euphydryas aurinia* Rott. and *Melitaea cinxia* L. in Britain and of *Melitaea* and *Mellicta* spp. in France.). *A. melitearum* is double-brooded on a single host generation. The first brood come out soon after the hosts break diapause, quickly emerge from the pupa and then re-parasitise the same host generation a couple of instars later.

Dwarfs

Small specimens of five species were seen on the trip. Both species of Orange Tip, in which dwarfs are often recorded, were seen; a small female *A. cardamines* L. was seen feeding on Honesty (*Lunaria annua*) but was unmeasured and a male *A. belia* proved to have wingspan of 15mm. (from centre of thorax to tip of forewing), — normal: 20mm. A Green Hairstreak (*Callophrys rubi* L.) had a wingspan of 10mm. (normal: 15mm.) and a Scarce Swallowtail (*Iphiclydes podalirius* L.) one of 30mm. (normal: 40mm.). The Baton Blue (*Philotas baton* Bergstrasser) was very variable in size — ranging from 10 - 15mm. The underside colouring was equally variable.

Abundance

It is worth drawing attention to the abundance of certain butterflies and moths, as the degree of abundance fluctuates from one year to the next. For instance, this Spring the Large White (*Pieris brassicae* L.) and the Orange Tip (*A. cardamines*) were extremely common compared with previous Springs. So too were two Mediterranean species, the Southern Festoon (*Zerynthia polyxena*) and the Nettle-Tree Butterfly (*Libythea celtis* Laicharting) which feeds on the Nettle Tree (*Celtis australis*). The latter has seen a steady increase in numbers over the last few years, such that it can now

be regarded as frequent rather than rare. The Scarce Swallowtail (*Iphiclides podalirius*) is still very common; while the Swallowtail (*Papilio machaon* L.) is always infrequent. A figure of at least 50 : 1 in favour of *I. podalirius* can be put on these two Swallowtails, although there is an abundance of Fennel (*Foeniculum vulgare*) and Wild Carrot (*Daucus carota*) in the valley.

Two species which are rare in England were frequent in the Cévennes : The Camberwell Beauty (*Nymphalis antiopa* L.) found mostly flying in sheltered valleys, where there was an abundance of Willows, and the Large Tortoiseshell (*Nymphalis polychloros* L.), many specimens of which were bedraggled.

Other items of interest

1. In one of the Southern Festoon meadows we saw a Mallow Skipper (*Carcharodus alceae* Esper) which had been caught by a yellow spider lurking in the head of a Dandelion (*Taraxacum* sp.).

2. We observed a fourth instar larva of *Mellicta deione* being parasitised by a small black hymenopteron (see above). The latter was securely fastened to the larva towards the anal end and the larva was writhing about in its efforts to dislodge the parasite, which remained in position for about thirty seconds, only flying away when the larva wriggled off the stone it was on in a wall and fell to the ground.

3. On one occasion a Camberwell Beauty (*N. antiopa*) flew for some time along the road in front of our car and, with no particular effort, maintained a speed of about 26k.p.h. (17m.p.h.).

Heterocera

The surprise at the MV lamp was the appearance of the large Saturniid *Saturnia pyri* D. & S. a species that, up to this year, has been rare. It has not always appeared at the MV lamp, being seen in previous years at lighted windows. Two males were attracted to the light on the 12th., two on the 15th., and three on the 17th. Only one female came to the light, on the 12th. Our neighbour, M. Patrick Ducros, who has operated the light in our absence, has only recorded the moth once in six years. One of us (J.F.) has only seen the large green larva once in the area, when it was floating down a swollen river in 1968.

The Emperor moth (*Saturnia pavonia* L.) was out, but not at the light. M. Patrick Ducros recorded a pair *in cop.* at Cambulon on the 11th. April and a fresh female was found flying by day on the 12th. This latter failed to attract males, although she was placed outside for almost a week.

One of the other attractions at the light was the Double Lunar Stripe (*Minucia lunaris* D. & S.) which is always very common and exists in two colour forms, a slate blue and a grey.

Although we ran the MV lamp every night, the cold, clear weather and full moon resulted in very limited catches, only one

other species being of interest. On the 14th. we caught a Noctuid which we were quite unable to identify. It appeared similar to the Middle Eastern tribe *Armadini*. It was finally identified by Mr. M. R. Honey (B.M.N.H.) as *Aleucanitis cailino* Lefebvre, a species whose range extends from the French Mediterranean littoral to the Southern Mediterranean and the Middle East (Syria). The species is not uncommon at Cabane Vieille as M. Patrick Ducros had taken several specimens in this and preceding years.

Rhopalocera

Overall we recorded 35 species, full details of which are given below.

HESPERIIDAE

Pyrgus malvae malvoides Elwes & Edwards, quite common.

P. onopordi Rambur, two or three only.

Carcharodus alceae Esper, common.

PAPILIONIDAE

Papilio machaon L., two or three only; rare.

Iphiclides podalirius feisthamelii Duponchel, common.

Zerynthia polyxena cassandra Hübner-Geyer, common in two meadows only.

PIERIDAE

Pieris brassicae (L.), very common.

Artogeia napi (L.), very common.

Artogeia rapae (L.), common, but less frequent than the preceding two species.

Anthocharis cardamines (L.), very common in Gard and Hérault.

Anthocharis belia euphenoides Staudinger, very common in Hérault.
Absent from Gard.

Colias crocea Geoffroy in Fourcroy, a few only.

Gonepteryx rhamni (L.), very common in Gard & Hérault.

Gonepteryx cleopatra (L.), very common in Hérault, less so in Gard.

Leptidea sinapis (L.), a few only.

LYCAENIDAE

Lycaena phlaeas (L.), fairly common.

Heodes tityrus Poda, not uncommon in Gard; not seen in Hérault.

Callophrys rubi (L.), common.

Cupido minimus Fuessli, a few only.

Everes alcetas Hoffmannsegg, two only in Hérault.

Celastrina argiolus (L.), common.

Pseudophilotes baton Bergstrasser, common. Size very variable (10-16mm.)

Polyommatus icarus Rottemburg, two only in Gard.

LIBYTHEIDAE

Libythea celtis Laicharting, quite common.

NYMPHALIDAE

Nymphalis polychloros (L.), quite common in Gard. Not seen in Hérault.

N. antiopa (L.). Not uncommon in Gard. One only seen in Hérault.

Inachis io (L.), common.

Vanessa atalanta (L.), several seen in both Départements.

Aglais urticae (L.), common.

Issoria lathonia (L.), one only in Gard.

Clossiana dia (L.), common in Gard. Not seen in Hérault.

Mellicta deione Geyer, larvae very common in Gard on *Cymbalaria muralis*.

SATYRIDAE

Coenonympha pamphilus (L.), a few in both Départements.

Pararge aegeria (L.), a few in both Départements.

Lasiommata megera (L.), common.

Acknowledgements

We would like to thank especially for their help:— Mr. R. F. Bretherton, for his advice on foodplants; M. Patrick Ducros, for supplying information about his moth-trap captures; Mr. R. Goodden & Mr. J. S. Keesing, for providing *Aristolochia* spp.; Mr. M. R. Honey, for determination of *Aleucanitis cailino*; Dr. M. Shaw, for determination of and information about *Apanteles melitearum*.

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THE HISTORY OF *EUCHROMIUS OCELLEA* (HAWORTH) (LEP: PYRALIDAE) IN BRITAIN

By BERNARD SKINNER*

It was the capture of a specimen of *Euchromius ocellea* in November 1981 that prompted me to research the past history in Britain of this rare immigrant Pyrale. Since the first published record in 1812, several authors, namely South (1890), Donovan (1932), Beirne (1952) and Huggins (1958), have attempted to publish up-to-date accounts of this species' history; without exception each of these accounts contains at least one or more important errors and it was because of this that I decided to compile a, hopefully, accurate list of all the twenty five British records. In each case, the original published record was checked, and where conflicting dates or localities appeared in print, then reference was made either to the data attached to the specimen or to the captor's field diaries.

Although the life history of *ocellea* remains unknown, there is little evidence to support the views expressed by earlier authors that the larva might be associated with stored food products and that its occurrence in this country is due to accidental importation. On the contrary, a number of the *ocellea* to visit this country have arrived in the company of recognised immigrant species, proving its status beyond doubt. On two occasions, in 1967 and 1981, it appeared on the same night as *Tathorhynchus exsiccata* (Lederer), a Noctuid species suspected of originating from either South-East Europe or North Africa, and of which only nine specimens have been recorded from the British Isles.

The Records

One in garden, early Spring *circa* 1812, London Suburbs, captor not named, (A. H. Haworth, *Lepidoptera Britannica* (1812) p.486).

One while sallowing, mid March 1861, Glamorgan, captor not named, (H. T. Stainton, *Ent. Ann.* 1862: 110).

One at light, first week of September 1865, near Dumfries, Mr Lennan, (G. J. Hearder, *Ent. mon. Mag.*, 3: 139).

One, 20th January 1867, St. Helens, Isle of Wight, J. Rogers, (A. E. Wright, *Entomologist*, 65:80).

One while beating, February¹ 1869, Eastham Wood, near Liverpool, Cheshire, T. J. Roxborough,² (C.S. Gregson, *Entomologist*, 4: 249).

Two, February 1869, Cheshire Coast, captor not named, (C. S. Gregson, *Entomologist*, 4: 263).

One male at rest on grass stem, 4th August 1879, Folkestone

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¹Repeatedly given as March.

²One assumes that the erroneous reference to the county of Roxborough in Beirne (1952) derived from the name of the captor of the first Cheshire specimen.

Warren, Kent, S. Webb, (Webb, *Ent. mon. Mag.*, 16: 101).

One, 21st February 1899, New Forest, Hants, H. Ashby, (Ashby, *Entomologist*, 32:258).

One at window light, 5th October 1921, Grange-over-Sands, Lancs, A. E. Wright, (Wright, *Entomologist*, 55: 38).

One, 22nd May 1923, Charmouth, Dorset, W. D. Lang, (N. D. Riley, *Entomologist*, 57: 90).

One disturbed during day, 11th September 1928, New Forest, Hants, E. S. Craske, (J. W. Metcalfe, *Entomologists*, 62: 78).

One on the wing at night, 23rd January 1932, Timoleague, Co. Cork, G. E. Lucas, (C. Donovan, *Entomologist*, 65:67).

One at light, 17th February 1950, Hawley, Hants, A. W. Richards, (Richards, *Entomologist*, 83: 278).

One at m.v.l., 10th March³ 1957, Maidencombe, Devon, F. H. Lees, (S. T. Stidston, *Trans. Devon Assc.* 90:202).

One at m.v.l., 30th May 1958, Martyr Worthy, Hants, D. W. ffennell, (ffennell, *Entomologist*, 91: 262).

One male at m.v.l., 7th September 1958, Dungeness, Kent, D. More, (H. C. Huggins, *Entomologist*, 92: 26).

One at m.v.l., 13th September 1958, Maidencombe, Devon, F. H. Lees, (R. A. French, *Entomologist*, 92: 176).

One at m.v.l., 13th June 1964, Mitcheldever, Hants, C. H. Dixon, (Dixon, *Ent. Record.*, 76: 243).

One, 31st January 1966, Horrabridge, Devon, R. J. Revell, (H. A. Kennard, *Trans. Devon Assc.*, 98:56).

One, 30th January 1967, Torquay, Devon, H. E. Marshall, (R. A. French, *Entomologist*, 104:217).

One at m.v.l., 3rd February 1967, Martyrworthy, Hants, D. W. ffennell, (ffennell, *Ent. Gaz.* 18: 56).

One female at m.v.l., 23rd January 1969,⁴ Burlesdon, Hants, I. A. Watkinson, (B. G. Goater, *Butts & Moths of Hampshire* (1974), 175).

One at m.v.l., 14th October 1978, Usk, Monmouthshire, G. A. N. Horton, (Horton, *Ent. Rec.*, 91: 26).

One male at m.v.l., 22nd November 1981, Wye, Kent, (B. Skinner).

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³Recorded in error as the 12th February in *Trans. Devon Assc.* 90: 202.

⁴Recorded in error as 1970 in *Proc. Brit. Ent. & Nat. Hist. Soc.* 4: 11.

THE IMMIGRATION OF LEPIDOPTERA
TO THE BRITISH ISLES IN 1981, INCLUDING THAT
OF THE MONARCH BUTTERFLY:
DANAUS PLEXIPPUS L.

By R. F. BREThERTON* and J. M. CHALMERS-HUNT **

(Concluded from page 87)

ANNEXE III

The Monarch or Milkweed Butterfly (*Danaus plexippus*
L.) in 1981.

The records listed below are essentially of sightings only, since few of the butterflies are known to have been caught. Almost half of them came from the numerous watchers in the Isles of Scilly who were primarily engaged in studying the simultaneous immigration of at least a dozen species of North American birds. We understand that, as with the birds, multiple sightings of the same butterfly were as far as possible eliminated from the daily totals; but in the limited areas of the islands repetitive sightings of the same insect must surely have been frequent during some 20 days of record spread over five weeks. The largest number mentioned as having been seen in one spot simultaneously was three or four round an apple tree on St. Agnes on September 26/7, though there are also references to "several" roosting collectively on various days among Monterey pines near the airport of St Mary's. Some duplication may also have occurred as the Monarchs moved about on the mainland of Cornwall and South Devon and elsewhere. It is therefore not possible to estimate how many individuals are represented by more than 130 sightings listed. It is however safe to say that the immigration of 1981 was of at least the same order as those of 1933 (40 records) and 1968 (65), which were by much the largest since the species was first noted here in 1876.

Four forerunners of the invasion were seen on September 24, curiously spread between the Isle of Man after a severe south-westerly night gale, Co. Kerry, St Mary's, Scilly, and one observed 100 miles further south at sea off Ushant, which perhaps did not reach Britain. On September 25 there were over a dozen sightings, with Scilly in the van but with singles in Cumberland, West Cornwall, South Devon, South Hampshire, Pembrokeshire, and even co. Wexford, all in near-coastal localities; in the three following days, September 26 to 28 over 40 were reported, including nine in Pembrokeshire, one in Dorset and a single presumably fellow travelling American Painted Lady (*Cynthia virginianensis* Drury) in Glamorgan. Weather maps and wind directions show September 24, 25, and daylight hours of 26 as the most likely period for actual arrivals of

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Monarchs in south-west Britain; on the night of September 26 and until 30 there was a clear-cut influx of nocturnal immigrants, mainly *Herse convolvuli* and *Rhodometra sacraria*, which probably originated in Spain or North Africa, and came with a rather more southerly air stream. Further arrivals of Monarchs in October seem unlikely; a pronounced recovery in the number of sightings from October 4 to 7 is probably attributable to better weather and more observation over the week-end.

Many reports indicate that the first instinct of Monarchs after arrival was to feed at almost any garden or wild flowers available; buddleia, michaelmas daisies, sedum, golden rod, fuchsia, hydrangea, heather, gorse are all mentioned as attractive to them. In Scilly a number seem to have settled down, and the records of them continue until October 27. Their habit, noted by several observers, of roosting gregariously upside down on Monterey pines agreed with American experience of their preparations for hibernation in the south; a watch for possible survivors even in Scilly should be kept in the spring of 1982. Others, including that seen at sea between Scilly and Penzance on September 28, moved on. The paucity of October records in mainland Cornwall and South Devon may be due to outward movement, which reached far enough along the South Coast to provide four sightings in Sussex between September 30 and October 10; two seen in Merioneth on October 1 and 4 probably came north from Pembrokeshire. About the only example reported far inland, one seen near Thame, Oxfordshire there is doubt, as it had been suggested that this may have resulted from local rearing of larvae in captivity.

The simultaneous presence of so many North American birds makes it clear that this compact invasion of Monarchs originated there, and not in the other possible sources in the Canary Islands or Madeira, from which, to judge from their associations with other immigrant species, a few examples may have come in other years. Meteorological information shows that some of the annual southward movement of Monarchs in North America must have been diverted, probably in the states of New Hampshire and New York on September 20 or 21 by very strong west and south west winds which blew in a broad arc round a very deep depression, which moved quickly across the north Atlantic and gave fronts which crossed Britain on September 24 and 25. This implies a flight of about 3,500 miles taking about three or four days. It is apparently not known how far Monarchs use mainly gliding flight or add substantially to wind speed in such migrations; but American evidence has shown that their flight is impaired at temperatures below 50° F., so that they are unlikely to travel at high altitudes. Since on trans-Atlantic flight they cannot pause to feed, their net consumption of fat must be large, and this may diminish their powers of long survival after they have arrived; at least it explains their observed urgent desire for refreshment then.

The invasion of 1981 differed somewhat from the last big influx, which was in 1968 (J. F. Burton, *Animals* 12: 122-6; R. A. French, *Entomologist* 105: 260). The four forerunners were noted

from August 9 to September 24, and the main arrivals, which began on October 2, were probably less concentrated in date and had their points of impact in south east Devon and Dorset, which provided 45 of the 65 records. These included, however, two reports of ten seen together, on October 6 and in mid October; and the trail of records lasted until November 11. The internal spread was much wider, with single records far inland in Gloucestershire, Worcestershire and Yorkshire.

Since then, two *D. plexippus* were reported in 1969 and singles in 1971, 1972, 1974 and in each year from 1977 to 1980, not all of which are above suspicion of being escapes or releases from captivity. There was a small but definite immigration in 1970, when seven or eight were seen, as well as two *C. virginensis*, and another in 1973, of which there were over a dozen reports. As some of these records from 1969 to 1980 have not been published, they have been listed at the end of this note.

The Record

AT SEA. Off Ushant, 46° N 58° 7'02" W, September 24, 3.30 pm., flying round s.s. Canberra, one; an American Purple Martin also seen (R. Burridge per M. Rogers); seen from m.v. Scillonian midway between Penzance and Isles of Scilly, September 28.

CORNWALL, ISLES OF SCILLY. Daily numbers sighted by bird-watchers (per D. Hunt and R. D. Penhallurick): St Mary's, September 24 (1); 25 (6 plus); 26 (5 plus); 27 (1 plus); 28 (2); 30 (5); October 1 (1); 4 (1); 5 (6 plus); 6 (2); 7 (4); 10 (1); 11 (5); 12 (3); 13 (2); 14 (1); 15 (1); 18 (3); 22 (1). St Agnes, 25 (1); 27 (3); 28 (1); October 5 (1); 6 (1); 7 (1). Gugh, September 25 (1). St Martin's, October 5 (1). Tresco, September 26 (1); 27 (2); 30 (1); October 4 (1); 12 (1). Other records, some probably included in the numbers above: St Mary's September 24/27, one seen on several occasions (Prof. Harvey per D. Agassiz), 28, one seen on a tamarisk hedge by St Nicholas church, Old Town (M. J. Zealley per RDP); October 13 and 18, one seen beside the airport (M. Sell per R. I. Lorimer); 13, one watched by J. Randall near the airport, imbibing resin from a pine tree; other reports of these Monterey pines serving as a roost and base for flights during bright days (Archer-Lock, *Ent. Rec.*, 93: 201); 27, one gliding along young pines; settled; flying into mature pines (Foggitt, *Ent. Rec.*, 93: 202). St Agnes, September 26/27, four reported around an apple tree, which also contained an American Magnolia Warbler (Foggitt, *ibid.*). St Martin's, September 26 or 27, one followed along the coast from opposite Plumb Island to White Island (K. & J. Jamieson per D. Hunt).

CORNWALL, W. Kynance, September 25 (or possibly 24), a.m., one watched crossing the stream and settled on montbretia (Mr & Mrs Marrifield per RDP); 25, Nancledra, one watched on fuschia and buddleia (E. M. P. Simpson per RDP, and Smith, *Ent. Rec.*, 93: 201); 26, Lizard Downs, about noon moving

south and feeding on *Erica vagans* (Major-Gen. P. G. Turpin per RDP); St Levan near Lands End, by Mr. Garceau (Smith, *ibid.*, and RDP); 27 Ashton near Breage, on buddleia and hydrangea (J. Fairbrass per RDP); Mylor Harbour, sighted from boat (J. Cook & M. Hillyer per RDP); Kennack, 28.9, before noon, flying and settling on a hedge with buddleia nearby; Hayle, before noon, flying over lucerne (Mrs C. Cook per RDP); Lamorna, seen for ½ hour about noon, mostly on escallonia; photographed; flew westwards (D. Tangye per RDP); Loe Pool, Porthleven, 3 p.m., flying along a path and among reeds (Major-Gen. P. G. Turpin per RDP); between Lizard and Housel Bay, 30, 3p.m., one seen from cliff path being blown along the cliff face towards Housel (Mr & Mrs R. J. Williams per RDP); Mount Hawke, late September, on a bush by the main street (Mrs Battersby per RDP); 29 or 30, Housel Bay, one seen flying south west on the cliffs at Housel Bay east of Lizard, finally turning inland and disappearing near the lighthouse (D. Wills per B. Elliot).

CORNWALL, E. Near Black Head, St. Austell, September 27, about noon, one settled on heather (Dr G. Potts per G. M. Spooner); Nare Head, 6 p.m., settled on gorse, then flying off in relaxed flight and returning eastwards (G. P. Gill per RDP); 28, near Gorran Haven, a male picked up dying in the road (Miss F. Dunn per RDP); 30, Duchy Nurseries, Lostwithiel, a damaged female found on brambles and taken home, where it was still alive on November 1 (B. Jackson per RDP).

CUMBERLAND, Sellafield, on coast north of railway station, September 25, one female caught by F. Downton (Kydd, *Ent. Rec.*, 94: 37).

DEVON, N. Tunnels Beach, Ilfracombe, early October, one captured by K. Wilson and retained (*Western Morning News*, 6.x. 1981) Lundy Island, 25.9, one arriving over the sea at the landing beach, then again flying inland; seen frequently by other observers during the following week (C.W. Dee).

DEVON, S. September 25, Noss Mayo, one seen at close quarters on buddleia and flying northwards (G. M. Spooner per RDH); 25 or 26, one seen in Plymouth City Centre (per Plymouth City Museum); 26, Plymstock, about noon, one flying eastwards ahead of car (Dr. Q. Bone per G. M. Spooner); 27, Kingsbridge, one seen over michaelmas daisies, and another at Prawle Point among bracken (V. Tucker per RDP, and Archer-Lock, *Ent. Rec.*, 93: 199); 27, near Slapton Ley, probably three insects in several hours, one of which frightened a stonechat from its gorse perch; another, found damaged on the beach, remained alive in Plymouth Museum for about two weeks (A. Archer-Lock, V. Tucker and other observers); ? 26 or 27, Arreton Gifford, one reported by telephone (G. M. Spooner per RDH); 28, Prawle Point, four seen between 1 and 6 p.m. on the same ground as on 27 (P. J. Hopkin); Slapton, October 6, one seen (per RDP); no exact date, Newton Ferrers, two (per RDP).

- DORSET. Winspit, Worth Matravers, September 26, one seen and identified (Dr R. Green); undated, Portland Bill, two, and another nearby (per RDH).
- HAMPSHIRE. S. Lymington, September 25, a female caught flying in a neighbour's garden and retained (A. Harmer); 27, one seen closely after flying in from the sea at Pennington Marshes (Mr & Mrs R. Allison per B. Goater); 30, Fareham, one at buddleia at 11.30 a.m. and the same one (or another) the following day (Mrs. J. Carpenter). October 13, one flying over the seawall, then NNE inland (G. R. Elliott).
- ISLE OF MAN. Ballakaighan, Castletown, September 24, in SW wind after severe south westerly gale, one, probably male, hovered briefly over golden rod, settled on a willow tree, and moved northwards over open farmland (Hedges, *Ent., Rec.*, 93: 202).
- [OXFORDSHIRE. Long Crenden near Thame, no exact date, one seen flying in a garden by Mrs B. Woodell (per Brian Wildridge; *Guardian*, 20.x.1981 refers). Possibly an escape.]
- SUSSEX. E. Pett, October 1, one (M. Cowell per CRP); Rottingdean, 8, one (J. Woodman per CRP).
- SUSSEX. W. Kingston Gorse, Worthing, 30.9, one watched by Col. Searle on nettles for 2½ minutes (Col. Searle per Church, *Ent. Rec.*, 93: 202); Church Norton, Pagham Harbour, October 10, one watched flying about churchyard and into adjacent clump of conifers (E. Rayner *pers. comm.*; *Guardian*, 21.x.1981 refers).

WALES

- CARMARTHENSHIRE. Pembrey, September 28, four seen on sedum and michaelmas daisies (Mrs Watson per J. Comont).
- GLAMORGAN. Penrice Castle, Gower, September 28, one American Painted Lady (*Cynthia virginensis* Drury) seen on flowers and ground (Lipscomb, *Ent. Rec.*, 93: 242).
- MERIONETHSHIRE. Dyfi N. N. R., October 1, one seen flying south west over the estuary (R. Bovey per J. Heath); 4, Penmaen Pool, Dolgellau, one seen in a garden by Dr P. I. Clark (Kydd, *Ent. Rec.*, 94: 37).
- PEMBROKESHIRE. Dale Fort Marine Field Station, Dale Point, September 25, one feeding at flower bed (M. Rodgers). St Ishmaels, September 26, one (N. Young per J. Comont); St Clears, one (R. Howells per JC); 27, Littlehaven, one (G. Brace per JC); 29, Skomer Island, one (Mrs R. Alexander per J. Heath); October 4, Gelliswirk, one (Mrs Rusper per JC); 5, Preseli, one landed on car near the ITV mast (Mrs Connor per JC) 7, Haverfordwest, one in garden (per JC).

IRELAND

- CORK. W. Cape Clear Island bird observatory, September 29, one (per R. F. Haynes).
- GALWAY. Galway City, October 2, one seen in a garden (per R. F. Haynes).

KERRY, S. Inch Sound near Killarney, September 24, one resting on Marram grass, and seen again by others later that day (J. Kirsley).

WEXFORD, Gt. Saltee Island, September 25, one (per R. F. Haynes).

The authors are especially grateful to R. D. Penhallurick of the Royal Institution of Cornwall, Truro; to John Heath, National Biological Records Centre; to J. Comont, Haverfordwest, Dyfed; to D. Hunt, of Scilly, and R. F. Haynes, of Killarney, for their help and advice for the preparation of this list. It is, however, certainly far from complete, and further records will be very welcome for later publication.

1969 - 1980

1969 NORFOLK, E. Ditchingham, 7.9. (per French). HANTS, S. Winchester, 9.9. (per French).

1970 CORK, W. Fota Is., end May/early June (per French).

CORNWALL, W. Ruan Minor, August, three or four seen on buddleia, one later on hydrangea (L. A. Bean in RDP, *The Lizard*, 1975: 24). DORSET, Weymouth, 25.9. (per French). SOMERSET, N. Ashcott, end Aug./early Sept. (per French). SUSSEX, W. Pagham, Sept, 1st week (Gammon in Rayner, *Nat. Hist. of Pagham Harbour*, 2: 65).

1971 CORNWALL, W. Carlyon Bay, July, one seen on cliffs (Miss M. E. Matthews in RDP, *ibid.*).

1972 DORSET, Greenhill, 23.8 (per French).

1973 SCILLY. St Mary's Garrison Walk, 4.10, one seen by five people (French in C-H, *BENHS* 7: 58); 7/14.10, probably three (P.R.G. Marriott in RDP, *ibid.*), St. Agnes, mid 10 (R. P. Demuth, *Ent. Rec.*, 86: 72); CORNWALL, W. Porthleven, 20.9, on cliff, identified by A. J. Moore (French in C-H, *ibid.*; Lieut. Comdr. P. A. E. Bland in RDP, *ibid.*) St Ives or Carbis Bay, early 10, one said to have been seen (RDP, *ibid.*). CORNWALL, E. between Halton Quay and Weir Quay, flying over Tamar (Dr. F. H. N. Smith in RDP, *ibid.*); Fowey School, 19.9., mid-day, female caught and photographed, now in BM (Nat. Hist.) (J. T. O'Neill in RDP, *ibid.*). DEVON, N. Porlock, 30.9, female caught (H. M. Chappel in C-H, *ibid.*). HANTS, N. Kingsclere, early July, one seen by Mrs D. Freeman (C-H, *ibid.*). SURREY, Oxted, 19.10, one photographed by Mrs J. Batchelor (C-H, *ibid.*) CARDS. Yspyty Ystwyth, 16.9, 2 p.m., caught (J.J. Richards per French).

1974 KENT, W. Eltham, 15.9, at flowers (A. Palmer, per de Worms, *Ent. Gaz.* 26: 38).

1977 GLOS, S. Ryeford, 17.9, one seen and identified (G. H. Mansell, *pers. comm.*).

1978 SURREY, Epsom, 11.9, male seen in garden by Mrs. Y. Stevens (P. Holdaway, *Ent. Rec.* 91: 27).

1979 ISLE OF WIGHT. Yaverland, 6.7, photographed on escallonia in garden (J. Churcher in RFB & C-H, *Ent. Rec.*, 92: 95).

1980 WESTMORLAND. Grange-over-Sands, 12.10, one seen in garden by Mr and Mrs Bellorby (DWK in RFB & C-H, *Ent. Rec.*, 94: 48).

Plate III



Charaxes gallagheri van Son. 1. Final instar larva (Actual length 19mm).
2 Pupa (Actual length 18mm.)

A CONSOLIDATED HISTORY OF THE DISCOVERY OF
CHARAXES GALLAGHERI VAN SON 1962
(LEPIDOPTERA : NYMPHALIDAE): ITS HABITS,
HABITATS AND EARLY STAGES

By J. C. O. CHITTY*

Since the first discovery in 1956 of this very distinct species a fairly comprehensive portfolio of knowledge concerning its life-cycle, habits and habitats has been built up. It has also become apparent that, although its range of flight and seasonal appearances are limited, the species is widespread in Zimbabwe/Rhodesia and can be relied upon to appear with the greatest regularity in its chosen habitats in proximity to its foodplant.

Much of the information concerning this insect has been published piecemeal over the years and references to some of the literature on the subject are given at the end of this paper. However, it has occurred to me that a consolidation or summary of the gradual acquisition of knowledge of *gallagheri*, particularly of the early stages, might be of general interest to lepidopterists. Historically, the first known capture was a female taken by B. D. Barnes in 1934. However, this specimen was erroneously identified as *Ch. aubyni australis* van Someren & Jackson (1957), to which it bears a superficial resemblance, by van Someren & Jackson in 1957.

The original male from which the new species was described was caught by R. J. Gallagher, settled on mud, on 19th March, 1956. The specimen was sent to Dr. G. van Son at the Transvaal Museum, Pretoria, who named it for its discoverer.

The capture of another male on the same day by T. W. Schofield only a few miles away in the Sabi Valley remained unrecorded for some years owing to the failure by Schofield to appreciate that this specimen was of a then undescribed species.

These two simultaneous first records of a hitherto unknown species occurring within 10 miles of each other can only be described as an astonishing coincidence. It is also notable that both specimens were taken settled on mud. Virtually all subsequent captures have been either in trapnets or on trees in proximity to the foodplant, or on the wing.

The next known record was of a male trapped on 6th March, 1961, at Mapembi, near Odzi, by that veteran naturalist Harold Cookson. This locality is within 15 miles of the first captures. All three are at an altitude of approximately 900 metres in msasa savannah country studded with granite kopjes. Later in 1961 a new locality was discovered some 250 km away at Christon Bank, 30 km from Salisbury towards Mazoe. On 5th December, 1961, I netted a male settled on a twig about 3 m above ground at the summit of a granite kopje about 1,500 m above sea level. Further males were taken at the same spot during that month. Thereafter, many males were taken by a number of collectors both by handnets and in traps,

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at Christon Bank and certain other locations. There were, however, no known female captures until one was trapped by, appropriately enough, Harold Cookson at Mapembi on 31st March, 1962 in the vicinity of his earlier male capture. This specimen was used for the description of the female of the species by Dr. G. van Son, in 1963. However, it is believed that the females had apparently been recorded from Christon Bank by Dr. C. B. Cottrell prior to Cookson's captures.

Over the next few years, further females were taken in all areas where males had been recorded but their numbers were very small by comparison with the males.

Extensive collecting of the species since 1962 has revealed the very constant nature of its habits which, in brief, are set out below:—

- (1) The species is double-brooded, appearing on the wing in mid-March until late April and again from mid-November until late December.
- (2) The habitat is granite kopje country, normally associated with the foodplant, at altitudes of between 900 m and 2,000 m.
- (3) Its distribution is widespread, records extending from near Salisbury, eastwards through Melfort to Umtali, south via Odzi to Zimbabwe and on to Botswana.
- (4) The species is slowflying, bearing little resemblance in mode of flight to its near-congeners *Ch. chittyi* Rydon, 1980 and *Ch. guderiana* Dewitz (1879) both of which can be observed flying in company with *gallagheri* at Christon Bank.
- (5) The males exhibit quite remarkably constant preferences for the same perches year after year on the same trees where they will sit, with wings half-open sunning themselves at about 3 m from the ground, rarely taking flight unless disturbed.
- (6) The females are comparatively rarely seen except in proximity to banana bait and, as with many other *Charaxes* species, do not have the male habit of returning to the same perch after flight.

Some years were to pass before the foodplant and early stages of the butterfly were to be discovered. In October, 1966, having observed the behaviour of a number of females at Christon Bank, I sent Dr. van Son at the Transvaal Museum in Pretoria a sample of the bush which I believed to be the foodplant. This was identified by the South African National Herbarium as *Diospyros natalensis* ssp. *nummularia* (Brenan) (Ebenaceae). However, despite thorough searching over an extended period I was unable to find any larvae with which to substantiate my belief that this indeed was the foodplant. Confirmation was only to come some years later when that wizard of *Charaxes* breeding Mr. Ivan Bampton, having been shown the location and the actual bush which had been identified by Dr. Van Son, had little or no difficulty in finding, in May 1975, what were almost certainly *gallagheri* larvae, probably 3rd instar, on that and other examples of *nummularia* in the vicinity.

Three larvae were left in my care in May, 1975 and it was thus necessary for them to be brought through the winter, either as larvae or pupae, before reaching the imago stage as the November/December brood. A further three larvae, two from Christon Bank

and one from Zimbabwe (Lake Kyle) were received from Ivan Bampton in August of the same year. In the event this episode ended in failure, all the larvae dying before pupation in spite of regular supplies of fresh food on an almost daily basis. Behaviour indicated a semi-hibernatory period during the mid-winter months when little or no growth or feeding took place. It is reasonable to assume that these larvae should have pupated in November emerging later as the November/December brood. This experience indicated quite clearly a diapause probably in the 4th instar stage between June and September when very little feeding or growth takes place. This is in contrast with later experiences with the summer brood when larval growth remains strong throughout the warm weather prior to emergence in March/April.

In February, 1976, a further 10 larvae were secured by Bampton from both Christon Bank and Lake Kyle (Zimbabwe) areas and again left in my care. Nine were successfully brought through to the imago stage. Of these, four were males, all of which emerged first, and five were females. This would seem to indicate that, in nature, females are in numbers at least equal to, if not greater than, males although apparently much scarcer to the collector, and that there is a preponderance of earlier male emergences. Photographs of final instars and pupae were taken and have been used by Mr. G. A. Henning (1977) as the basis for his published description of the early stages of the species.

Subsequently, in November 1976, I was successful in bringing through to the imago stage two further larvae, also collected by Bampton at Christon Bank. The discovery of the egg stage came subsequently to the above series of events and the ovum has been described by Henning (1977).

Finally, one can only comment that it seems almost incredible that a species so distinct, so constant in its habits and so easy of capture when these are known, can have remained unknown and undescribed for more than half a century of entomological exploration in this country. Perhaps the answer may lie in the comparative difficulty of access to the summits of the granite kopjes which are its normal habitat and to its very definite reluctance to move more than a short distance away from the foodplant. It is certainly true that the development of Christon Bank for residential purposes, however much this may be regretted in relation to the potential threat to the fauna and flora of the area, has provided easy access to some particular spots yielding some remarkable entomological records.

The following is the description of the ova and final instar larva as given by Mr. Graham Henning in 1977:—

Ova: Usual *Charaxes* shape, yellowish white with brown ring if fertile. They are laid singly on both the upper and undersides of the leaves of the foodplant.

Final Instar Larva: Headshield green, with a faint, light green facial margin; horns long, with the upper two-thirds dark pinkish brown; dorso-medial spines black. Body

green with broad dorso-lateral somite bars on segments 6, 8 and sometimes 10. The somite bars are pinkish-white, anteriorly edged with black spotted with blue; the dorsosomitic spots on segments 6 and 8 are blue. Lateral ridge green and anal processes short and square.

Pupa: Plain green in colour.

The imago has been illustrated in so many publications already that a further description seems unnecessary.

Acknowledgements

I would like to thank Messrs. W. H., S. F. & G. A. Henning for reading the manuscript and Mr. I. Bampton for the provision of the early stage material.

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LARVAL VARIATION IN THE PINE BEAUTY: *PANOLIS FLAMMEA* HBN. — The larva of the Pine Beauty, *Panolis flammea* Hbn. is normally dark green dorsally and laterally, with a series of five longitudinal white stripes, and pale green ventrally with three thin cream stripes. A form in which the dark and pale green is replaced by dark and light brown is also known to occur. Whilst rearing this species I obtained evidence to suggest that the brown form is genetically controlled and is inherited as a unifactorial autosomal recessive. I also noted that the two types of larvae behave differently, in that when not feeding they take up different positions on the foodplant, *Pinus sylvestris*. Thus, the green larvae tended to rest lying along the needles, whilst the brown larvae rested on the pine twigs. The difference in behaviour has obviously evolved to increase the camouflage of the respective forms, and it would be interesting to hear if anyone else has noted similar behavioural differences in other species which show the same type of polymorphism, e.g. the Pine Hawk, *Hyloicus pinastri* Linn., or the Bordered White, *Bupalus piniaria* Linn. — (Dr.) MICHAEL E. N. MAJERUS, Dept. of Genetics, Downing Street, Cambridge.

THE DELICATE: *MYTHIMNA VITELLINA* HBN. IN MAY. — Several rather faded *M. vitellina* appeared in my light trap at Chyenhal near Penzance, Cornwall on the 30th and 31st May 1982. — M. W. F. TWEEDIE, Barn House, Rye, Sussex TN31 7PJ.

A SCUTTLE FLY (DIPTERA: PHORIDAE) THAT APPEARS TO BE A PARASITOID OF A SNAIL (STYLOMMATOPHORA: ZONITIDAE) AND IS ITSELF PARASITISED BY A BRACONID (HYMENOPTERA).

By R. H. L. DISNEY*

OBSERVATIONS

On 7 June 1980 while collecting snails from Druids Coombe, Somerset (Grid ref. 31/006 378), with a party of colleagues led by Dr. R. A. D. Cameron, I mentioned the possibility of finding shells occupied by the puparia of Sciomyzidae as opposed to snails. I was rewarded by being passed two shells of *Vitraea crystallina* (Müller) collected by John Hall. Both shells contained identical puparia lodged in the last whorl, in an identical orientation (Fig. 1). Unlike the puparium of a Sciomyzid, however, there were conspicuous respiratory horns protruding into the space just inside the aperture of each shall (Fig. 1). The specimens were placed in rearing tubes and subsequently each produced a male Phorid belonging to the species *Megaselia fuscinervis* (Wood), the first emerging on 26 June and the second on 29 June 1980.

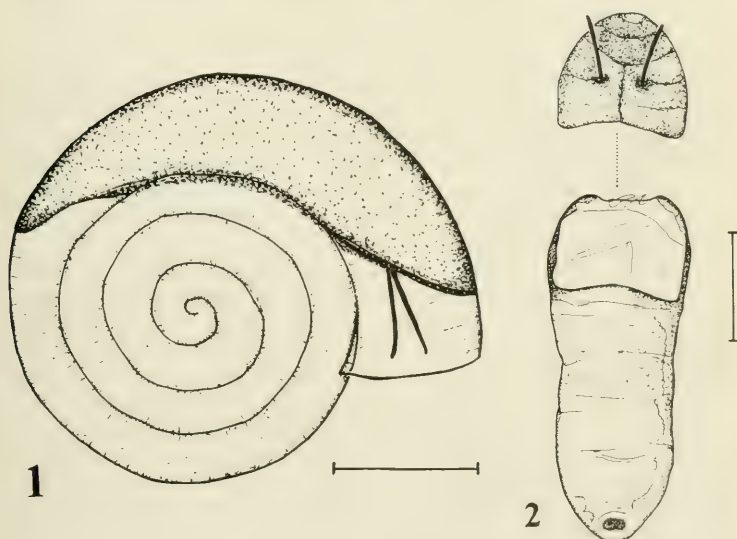


Fig. 1. Puparium of *Megaselia fuscinervis* inside shell of *Vitraea crystallina* (scale line = 1 mm).

Fig. 2. Empty puparium of *Megaselia fuscinervis*, with detached dorsal plate bearing respiratory horns. (Scale line = 1 mm)

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Further collections of small snails, and their shells, were made on the Malham Tarn Estate, North Yorkshire in July and September 1980 as follows.

In July collections were made for the Westside Wood (Grid ref. 34/8867). The only species of snail shell found to harbour puparia of *M. fuscineris* were *Vitraea crystallina* and *V. contracta* (Westerlund). 21 shells of *V. crystallina* were collected with empty puparia and 8 shells with live puparia. Only 1 shell of *V. contracta* with an empty puparium was collected. All the puparia were identical to those collected in Somerset and were positioned in the same way in the shells (Fig. 1). Of the 8 live puparia 7 were kept alive in rearing tubes and one was preserved. From the 7 puparia 2 females and 1 male *M. fuscineris* were reared. Two of the puparia gave rise to a single Braconid each and two died. The Braconids have been identified by Mr. T. Huddleston (British Museum, Natural History) as *Aspiloba inops* (Foerster). Stelfox and Graham (1950) refer to this species as *Panerema inops* but Fischer (1970) gives *Panerema* as a synonym of *Aspilota*.

In July collections were made from the Tarn Close ungrazed limestone grassland (Grid ref. 34/894 671) and again puparia of *M. fuscineris* were only found in shells of *V. crystallina* and *V. contracta*. Two shells of *V. crystallina* had empty puparia and 1 had a live puparium. One shell of *V. contracta* had a live puparium. A further collection was made on 4 September. One shell of *V. crystallina* had an empty puparium and 1 had a freshly dead snail along with a larva. The larva was preserved in alcohol and subsequently mounted on a slide in Berlese's Fluid. Although it proved to be the penultimate instar its cephalopharyngeal skeleton showed clear affinities with the remains of this structure in the remnants of the last instar larvae extracted from shells containing puparia of *M. fuscineris* (see below).

All live *Vitraea* snails from Westside Wood and Tarn Close were examined for larvae and then placed in rearing tubes. It was considered unlikely that early larval instars would be easily detected through the shell. It had been the moving black cephalopharyngeal skeleton that revealed the presence of the one larva that was found. It was considered worthwhile, however, to keep shells known to have been harbouring live snails at the time of collection to see if any might subsequently be found to contain detectable larvae or puparia of *M. fuscineris*. This experiment was unsuccessful as the snails died and were found to be infested with nematodes. These occurred in two sizes. The larger measured 1.7 – 2.0 mm in length and 0.1 mm maximum breadth, and had the anterior fifth tapered to a truncated point but the tail end more-or-less rounded. The smaller, presumed juveniles of the larger, measured 1.0 – 1.3 mm x 0.05 mm and had a more pointed tail end. Infestation of a dead *Vitraea* seemed to be initiated by the smaller nematodes and the larger ones only appeared later. By the time the snail was nearly completely consumed large numbers of small ones were observed leaving the shell. The shell with the larva of *M.*

fuscinervis in it also contained a few small nematodes. Shells of *Vitraea* found in the field with some remains of a dead snail still present were mostly infested with both sizes of nematode. In future experiments it will clearly be necessary to isolate individual snails in single tubes and to take precautions to exclude material likely to be contaminated with nematodes.

THE PUPARIUM AND LARVA OF *Megaselia fuscinervis*

The puparium of *M. fuscinervis* is illustrated in Fig. 2. It is unusually thin-walled, apart from the plate which detaches at the time of adult eclosion. This plate is so shaped that it precisely occludes the last whorl of the *Vitraea* shell, like an operculum in a prosobranch mollusc. By being positioned a little way back from the rim of the shell aperture (peristome) the respiratory horns are able to protrude forward while still being within the shell (Fig. 1). The puparium is generally brownish in colour with a dark brown detachable plate and the almost black, more-or-less straight, respiratory horns. The posterior spiracular processes are closer together than is usual in the genus *Megaselia*, and thus avoid any risk of being against the walls of the shell.

At high magnification the puparial integument is seen to be covered in evenly-spaced pointed denticles (resembling the bases of the micro-setae found in some species of *Megaselia*). The whole puparium is boat-like, with the anterior and posterior ends curving dorsally (Fig. 1). In order to prepare this drawing the specimen was slide-mounted in Dimethyl Hydantoin Formaldehyde Resin. This renders the shell more translucent without actually dissolving it. To prepare Fig. 2 a specimen was soaked in Berlese's Fluid to dissolve the shell and the extracted, empty puparium was then mounted on a slide in Berlese's Fluid.

The larva proved to belong to the penultimate instar but was evidently nearing moult, as the mouth hooks of the final instar were already forming above the functioning pair. This makes for a confusing picture. Discernible characteristics include the bifurcation of both the dorsal and ventral wings of cephalopharyngeal skeleton posteriorly and a conspicuous fenestration of the anterior bridge linking the anterior edges of the dorsal wings. The mouth hooks each have a single, down-curved, anterior tooth.

The larva was situated in the shell with its posterior end towards the aperture of the latter and its mouth-hooks probing the remains of the snail. The larval remains in a shell occupied by a puparium are to be found amongst the residue of the snail in the apex of the shell.

DISCUSSION

Megaselia fuscinervis adults have previously been recorded in Britain in the months of April, May, June and July (Wood, 1908, Parmenter, 1965, 1966, Disney, 1978). Otherwise the natural history was unknown. Recently, however, Dr. R. Szadiewski has sent me a specimen he had reared from forest soil in Poland in July 1980.

The observations presented above clearly indicate that *M. fuscinervis* puparia are not uncommon in shells of *Vitraea crystallina* and they also occur in shells of *V. contracta*. The precise positioning of the puparium and its modifications indicate that this is no accidental association. The finding of a larva consuming a snail showing no obvious signs of putrefaction further suggests that *M. fuscinervis* larvae are parasitoids of *Vitraea* snails in a manner reminiscent of of Sciomyzid larvae in larger snails (e.g. Berg, 1964). Furthermore the apparently invariable infestation of dead *Vitrea* by nematodes suggests at the least that these nematodes would be likely to demolish dead *Vitraea* before they could be exploited by the larvae of *M. fuscinervis*. Whether these nematodes will actually attack and kill healthy snails is not known.

The parasitisation of *M. fuscinervis* puparia by *Aspilota inops* provides the first host record for this Braconid. Stelfox and Graham (1950) give capture dates for this species in July, August and September.

Acknowledgements

I am grateful to the Shell International Petroleum Co. Ltd. for a grant to support my investigations of Phoridae.

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BLOMER'S RIVULET: DISCOLOXIA BLOMERI CURTIS AT WESTON-SUPER-MARE. — This species was of regular occurrence here prior to the advent of Dutch Elm disease. As I had not noticed it for several years I was pleased to see a fresh specimen in my moth trap on May 20 last, so hope that it is about to revive in numbers again. — C. S. H. BLATHWAYT, Amalfi, 27 South Road, Weston-super-Mare, Somerset. 21.v.1982.

Editorial

With this issue Mr. P. J. Renshaw relinquishes his duties as Treasurer, and we take the opportunity on behalf of all our subscribers to offer him our gratitude for having so ably managed the finances of the *Record* over the past nine years. He is succeeded by Mr. P. J. Johnson to whom we extend a hearty welcome and to whom all subscriptions should now be sent.

Current Literature

The Rewell Wood: A Survey of its Southern Habitats — A West Sussex Wildlife Recording Group Report by E. C. M. Haes and others. 17 drawings, 133pp., wrappers, ring binder (1981). Price £1.50 plus 40p p. & p. from M. Edwards, Lee-side, Carron Lane, Midhurst, Sussex.

Many authors have contributed to this enterprising report which, apart from various non-entomological disciplines, treats of the Thysanura, Orthoptera, Mecoptera and Dermaptera (by E. C. M. Haes) and Hemiptera (by W. Eley et al.) albeit briefly; then the Coleoptera (11pp.), Diptera (12pp.) and Hymenoptera (19pp.) (by M. Edwards, W. Eley et al.) and Macrolepidoptera (21pp.) (by S. Church et al.)

Among noteworthy species listed are: Hemiptera Heteroptera, *Aradus depressus*; Coleoptera, *Saprosites mendax*, *Tomoxia biguttata*, *Mordella aculeata*, *Strangalia aurulenta*, *Dirhagus pyamaeus*, *Elatér cinnabarinus*, *Epitrix atropae*; Diptera, *Evibrissa vittata*; Hymenoptera Aculeata, *Crossocerus exiguus*, *Arachnospila wesmaeli*, *Laslioglossum brevicorne*, *Osmia pilicornis*; Lepidoptera, *Apatúra iris*, *Hamearis lucina*, *Polyplóca ridens*, *Odontosia carmelita*, *Ptilodontella cucullina*, *Acrónicta alni*, *Lampropteryx suffumata*, *Trichopteryx polycommata* and *Dasychira fascelina*, though one suspects the latter is an error for *D. pudibunda*. — J. M. C.-H.

Garden Wildlife by Derek Jones and others. 152pp., numerous colour and b/w illustrations. Boards. Ebury Press 1981. £7.95

This large-format volume is very much intended for the general reader with a strong interest in "nature". A number of specialists have contributed including three well-known entomologists: J. F. Burton, W. R. Dolling and M. Tweedie.

There are chapters on the garden environment, birds, mammals and reptiles and a welcome seven chapters on invertebrates. Whilst there is some practical advice the book concentrates on providing interesting backgrounds to the creatures encountered in the garden. (much more solid practical advice is to be found in the "Back-garden Wildlife Sanctuary Book" reviewed in this Journal 93 : 228). Although a number of sweeping generalisations are made the text is readable, informative and well balanced — comments which can rarely be made about books intended for the "mass" market. The book is pleasantly illustrated by Phil Weare. — PAUL SOKOLOFF.

Obituary

Charles Herbert Dixon

Bertie Dixon who was born on the 2nd of May 1890, sadly died on the 10th March 1982. He farmed at Micheldever, Hants for most of his working life, and entomology took up the greater part of his spare time. His fine collection of British moths containing many rare and interesting species, including a remarkable drawer displaying parasites bred from doomed larvae and pupae, has been presented to the Hampshire County Museum. His collecting was concentrated on the Macrolepidoptera of the British Isles including Eire. He kept meticulous diary records of all specimens taken for his collection, as well as daily recordings of species found in his M.V. trap at Micheldever, and these records will also be held by the Museum.

A feature of his lifetime's work in entomology was the authenticity of his material: his collection contains only specimens which he himself had caught or reared, and was formed with scrupulous care and accuracy. Much of his collecting was carried out in the company of his great friends the late R. C. Edwards and Baron de Worms, and his work was often mentioned in the latter's reports in *The Record*, and he also made a substantial contribution to Goater's *The Butterflies and Moths of Hampshire and Isle of Wight*, in which he recorded for V.C.12. He was an inspiration to my sons and myself, as in recent years he imparted to us some of his great knowledge, and we shall greatly miss his advice and expert eye on our own entomological activities. — David Owen.

Notes and Observations

PALPIFER SEXNOTATUS MOORE (LEP.: HEPIALIDAE) IN BRITAIN. — In January 1981, three tubers of the arum lily *Arisaema speciosa* were procured from a Kent plant merchant. One of these did not develop and was found to contain a larva of the above species, which spun up at the beginning of May to produce an imago at the end of the month. The larva as first seen was 15mm long, with shape similar to that of a fully fed Tortricid larva, and of a greyish-white colour with pink suffusion and pale brown chitinous mouth parts. When about full grown, the larva was 55mm in length and similar in appearance to that of *Hepialus humli* L., except for the colour since it still retained its pink suffusion. Due to shortage of the original pabulum, the larva was transferred to tubers of *Arum maculatum* and finally Desiree potato. Prior to pupation, the larva formed a substantial cocoon of yellow silk 50mm long which was located vertically in the soil. The top of the cocoon was sealed with a few strands of silk just below the surface, and consisted of a tube 10mm long and 5mm in diameter, which led to a gradually widening pupal chamber of maximum diameter 9mm. At emergence time the pupa worked its way to the surface of the soil, so that the final segments alone remained within the cocoon.

A. speciosa occurs in the temperate Himalayas and the plant merchants advised me that the tubers were imported to Britain from India via Holland. As the plant is nearly hardy in southern Britain and popular with gardeners, further records of *P. sexnotatus* might be expected in the future. Record cards in the British Museum (Nat. Hist.) indicate that the type specimen of *P. sexnotata* came from Darjeeling, and the B. M. collection includes specimens from several parts of India. My thanks are due to Dr. Gaden Robinson and Dr. John Bradley for their help in identifying this insect and providing access to the relevant museum records. Ref.: *R. H. S. Dictionary of Gardening*, vol. 1, 2nd edn., 1956. — P. J. BAKER, Mount Vale, The Drive, Virginia Water, Surrey.

LAGIA ATRIPES MULS. & GUIL. (COL.) IN THE NEW FOREST, ETC. — There seem to have been but few references to this beetle in our literature since it was added to our list by me in 1948 (*Ent. mon. Mag.*, **84**: 287); the only one I have seen being in Buck, 1954, *Handb. Ident. Brit. Ins.*, **5** (9) : 3, where its differences from the common *L. hirta* L. are clearly set forth. (At the time of my record I had not seen the male.) *L. atripes* is now known to occur in a second East Kent locality — Ham Street Woods, where my late friend A. M. Massee first took it — besides the original one, Blean Woods. There are also two previously unpublished records for the New Forest, Hants., mentioned by Buck (*l.c.*) on my authority but without details, to which I would now draw attention. They were communicated by Dr. Massee and relate to a ♀ taken by him in New Park Inclosure, 27.v.38, and a ♂ by the late H. W. Daltry in Wilverley Inclosure, 3.vi.36. Both must previously have passed as large examples of *hirta*. The existence of the rarer species in Hampshire in the decade before it turned up in E. Kent is of interest in making the hypothesis of a recent arrival from the Continent far less likely than might have appeared originally.

In the year after bringing forward the species I received an interesting letter from Mr. Angus Fraser of Tankerton, near Whitstable, in which he reported having taken both sexes of *atripes* recently, not only at Blean but also at Tankerton, on the sea front on open waste ground, some 4 miles north of Blean. (There is no question here of mistaken identity, as the rest of the letter amply proves.) This last capture seems very strange for an insect that otherwise gives every indication of being an inhabitant of woodland; and unless others were noted there subsequently, affording evidence of breeding on the spot, I think they must be regarded as stragglers "out of their element". Almost certainly, by now, the beetle occurs in other E. Kent woods besides the two already noted. — A. A. ALLEN.

LARVAE OF ANARTA MYRTILLI L.: BEAUTIFUL YELLOW UNDERWING (LEP.: NOCTUIDAE) AND AN ADULT BOREUS HYEMALIS L. (NEUROPT.: BOREIIDAE) ON WINTER SNOW IN THE SCOTTISH HIGHLANDS. — During spring and summer months, the finding of insects on high altitude snow is a fairly regular occurrence both in the Scottish mountains and the Alps, though little has been written on the subject (see Masutti, L., 1979, *Insetti e nevi stagionale. Riflessioni su reperti relativi alle Alpi Carniche e Giulie*).

Boll. Ist. Ent. Bologna, 34: 75-94). In the majority of cases the insects are winged adults whose presence on the snow can often be attributed to transport by wind or thermals. Sizeable aggregations are frequently observed on buttresses and cols above gullies or steep valleys which funnel the wind upwards (Bruce, W.S., in Thornley, A., 1896. On some Coleoptera from the summit of Ben Nevis, collected by Mr. W. S. Bruce. *Ann. Scott. Nat. Hist.*, 5: 28-31). The two cases described below are apparently of a different nature and therefore perhaps worthy of notice.

While walking on the Scottish mountains during the winter, one seldom observes any insect life. However, whilst walking near Ben Macdui (Cairngorms, NO 005965) about ten larvae of *Anarta myrtilli* were seen, still living and moving, on the snow between the point where the Allt Carn a' Mhaim joins the Luibeg Burn (560m.) and just below Sron Riach (1100m). A couple of others were accidentally kicked out of *Calluna* which was projecting through the snow. The temperatures over the preceding few weeks had been exceptionally low, my walk taking place during a comparatively mild spell with freezing conditions perhaps only attained above 800m. on that particular slope. One wonders whether the larvae, which are known to overwinter, had been "tricked" into premature activity by the rapid rise in temperature.

My other observation concerns a single female snow flea, *B. hyemalis*, found sitting (inactive though still alive) on ice on the ridge west of Am Bodach (Glencoe, 900m., NN 163582). Though I frequently encounter *Boreus* in the Highlands, I have never previously done so at such a high altitude. It seems likely to me that it was carried up to the ridge by the very strong winds of the day before. — A. D. LISTON, 99 Clermiston Road, Edinburgh, EH12 6UU.

THE RECENT SPREAD OF *APION CERDO* GERST. (COL.) IN S. E. ENGLAND. — It is perhaps not yet widely known among coleopterists, except those living in the south-east of the country, that this weevil — for long restricted in our area to northern England, southern Scotland, and Ireland — has of late been turning up rather frequently in Kent and East Sussex. These captures seem to have begun with a specimen taken by Mr. E. G. Philp, of Maidstone Museum, on the sandhills at Deal (1963, *Ent. mon. Mag.*, 99: 71) and confirmed later by Mr. Colin Johnson, whose very useful paper on this species and its allies (1965, *Entom.*: 80-2) greatly facilitates their correct recognition. At the end of this work it is suggested that quite possibly the southern records of *A. cerdo* may be erroneous; apart from Mr. Philp's to which this does not apply, I have seen none such published, but if there are any much earlier ones I agree that this is indeed likely. Since the species is now certainly breeding in the south-east — but not, apparently, in any midland county which might suggest a link with the northern populations — it is probably safe to conclude that the recent appearance of *A. cerdo* in Kent and Sussex is due not to a southward spread from the northern centres but to an invasion from the Continent.

From the following data (given in somewhat compressed form)

one may trace, roughly, the north- and south-westerly progress of this *Apion* from its presumed arrival at a point on or near the coast in the Deal area shortly before 1962. *East Kent*: Deal, vii. 62; Brook, near Wye, vi. 63; Dungeness, vii. 64; Chiddingstone, vii. 69; again at Deal, vii. 69; Wittersham (Rother Levels), ix. 69; Sandwich Bay, viii. 78 in some numbers on *Vicia cracca*, all records of E. G. Philp, who has found it also more recently in a good many other E. Kent localities. *East Sussex*: Milton Street (bank of R. Cuckmere), xi. 73; Little Horsted, vi. 74; Friston Forest, frequent, vi. 75-78; Plashett Wood, vi. 78 on *Lathyrus pratensis* (probably) in numbers; all records of P. J. Hodge, who tells me that *A. cerdo* appears now to be general in his part of the county, equally with its nearest relative *A. subulatum* Kby. On 21.vi.70 I swept a ♀ *cerdo* from a clump of the tufted vetch in the Devil's Dyke area of Brighton Downs; but it was getting late and there was no time to investigate further, and in any case the insect was passed as *subulatum* until much later. Mr. Hodge points out that this is farther west in Sussex than any of his captures, and also that the species has by now probably reached Surrey.

Finally I can report *A. cerdo* from S. E. London and W. Kent, where I took it last year: Woolwich Common, 1 ♀, 31.v.81, and Crockenhill, near Swanley, 2 ♀ ♀, 4.viii.81. In both places it was swept from mixed leguminous plants, including in the latter locality a little *V. cracca*.

I am obliged to the above-named gentlemen for sending me their records and suggesting that I publish them. — A. A. ALLEN.

JOHN ABBOT'S DRAWINGS AND NOTES FOR A PROPOSED SUPPLEMENT TO SMITH AND ABBOT, "THE NATURAL HISTORY OF THE RARER LEPIDOPTEROUS INSECTS OF GEORGIA" (1797). — Since completion of my paper on "Smith and Abbot" (93:213-218) I have had relevant correspondence with Mr. J. E. Traue, Chief Librarian, The Alexander Turnbull Library, Wellington, N. Z. We agree that the Turnbull Library set of Abbot drawings is quite probably the one sent by Abbot to William Swainson in 1818 and is not, as Parkinson (Turnbull Library *Record*, 11, 1978, 26-36) supposed, the "book of Drawings" shipped to Swainson in 1835. The Turnbull set was intended to be published as a supplement to "Smith and Abbot," and Abbot also supplied Swainson with manuscript "Notes to the Drawings of Insects" as he had done when collaborating with Smith. (Actually Abbot furnished a number of customers with sets of drawings and notes which he 'advertised' as supplemental to the Smith volumes, but these appear to have been the only ones meant to be published as such.)

The identity of the drawings with those sent in 1818 is suggested by their number, 103 (one of the total of 104 to match "Smith and Abbot" having been lost; Swainson, *Taxidermy*, 1840, 99-100) and their relatively small size, 34.5 x 21 cm. As explained in my previous paper, Swainson objected that the drawings were not as highly finished as those used by Smith, and chiefly that they were "much smaller in size so that they can never be bound uniformly with that work." In addition to his plans for publication, Swainson wished to bind his original Abbot drawings to match a book which

averages 41.5 cm. in height. Abbot promised a larger set, and could hardly have made the same 'error' again.

Another proof is the content of the Turnbull drawings (Parkinson, 1978). In their correspondence, Swainson initially agreed to Abbot's idea of including drawings of "some of the other Genera of Insects" in the set of *Papilio* and *Sphinx*, writing on the 25th October 1817 that "A few drawings of the other Genera of Insects would also be welcome, if accompanied by their metamorphos." The Turnbull drawings do indeed depict other insects, and not all Lepidoptera. These must have been the drawings Swainson complained about on the 28th January 1819 when he wrote (contradicting himself): "I only wish to have drawings of the Papillios & Sphinxes which are not in Smith."

Perhaps the replacement set was never provided, for when reporting the abandonment of the project in *Taxidermy*, Swainson mentioned only the short set of 103 drawings. The location of the 1835 "book of Drawings" is unknown, and it is uncertain whether these figured in the publication scheme at all. At least we know from the drawings and notes in the Turnbull Library (Parkinson, 1978) what the two supplementary volumes to "Smith and Abbot" would have contained had Swainson been satisfied with Abbot's efforts at the time.

In his article Parkinson mentions the manuscript "Notes" as "in a hand which may be Abbot's." I have obtained photocopies which prove that the notes are certainly in Abbot's distinctive hand, and in character are much like the observations used by Smith. — RONALD S. WILKINSON, 228 Ninth Street, N. E., Washington, D. C. 20002.

SWIMMING BEHAVIOUR IN *HYPERA RUMICIS* (LINNAEUS) (COL: CURCULIONIDAE). — During May 1981 I tested a few species of weevils (Curculionidae) for swimming ability, and among some other species I discovered that *Hypera rumicis* (Linnaeus) was capable of swimming quite efficiently. When a few adults of the weevil were placed in a small water filled plastic dish they were, after a brief period, observed to swim through the water fairly rapidly by making a definite breast 'stroke action' with all six legs. The actual swimming was performed by extending the forelegs first in a wide arc then the mid and hind pairs were brought into action at the same time, thus providing the necessary forward movement. Progress through the water was mainly by alternating movements of each pair of legs, but the greatest effectual stroke was made by the forelegs. The specimens of *H. rumicis* were also capable of performing the same swimming stroke while on their backs. Movement through the water was quite rapid in either position and this was especially noticeable when the temperature of the water was raised slightly.

The swimming action in *H. rumicis* was very similar to that of *Ceutorhynchus viduatus* Gyllenhal previously reported by me, (1978, *Entomologist's Gaz.* 29: 76) and it also appears to resemble, to some extent the motion and style performed by *Litodactylus leucogaster* (Marshall), as described recently in a paper dealing with

the general biology of this species by G. R. Buckingham and C. A. Bennett., (1981, *Ann. Entomol. Soc. Amer.* 74: 451-458.).

This adaptation in *Hypera rumicis* is interesting and rather intriguing as it is a weevil which is not usually associated with aquatic habitats or found in really damp situations.

In my experience of the species in West Cumbria I nearly always find it on Curled Dock, *Rumex crispus* L., and to a lesser extent on Broad leaved dock, *R. obtusifolius* L. where the plants grow in comparatively dry habitats and away from water. However, it is interesting to note that *H. rumicis* is known to feed and develop on the Great Water Dock, *Rumex hydrolapathum* Huds., so it would be very worthwhile to discover if the same swimming ability is also developed in individuals colonising this plant as well.

Swimming in certain species of Curculionidae is not uncommon, and a number of members in the subfamily Ceuthorhynchinae are known to be well adapted for a semi-aquatic life. One example is *Eubrychius velutus* (Beck) which is known to possess a very efficient plastron respiration system as described by W. R. Thorpe and D. J. Crisp, (1949, *J. exp. Biol.* 26: 219-260) and this adaption enables the adults to stay submerged for long periods.

At the same time as I tested *H. rumicis* for swimming I also experimented with three other members of the genus, *H. dauci* (Olivier), *H. nigrirostris* (Fabricius) and *H. plantaginis* (Degeer). When these species were placed in water they made no attempt to perform any recognizable swimming stroke, but just merely floundered about in the water.

This would appear to be the first recorded observation on the swimming behaviour in *H. rumicis* and also the first on a member of the subfamily Hyperinae. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF.

THE USE OF THE TERM 'POCK-MARK' IN ENTOMOLOGY. — Subscribers with a medical background will have been interested in Mr. Chalmers-Hunt's note in the March/April 1982 issue of the *Record*.

I wonder if they, as I, have searched unsuccessfully for cases of *Coleophora varicella* (sic.) on the bodies of their patients who have previously suffered from chickenpox? — DR. J. R. LANGMAID, 38 Cumberland Court, Festing Road, Southsea, Hants PO4 ONH.

SENTA FLAMMEA CURTIS (THE FLAME WAINSCOT) AT WYE, KENT. — Two *Senta flammea* appeared on separate nights in early June 1982, in the trap I run at Wye College. Since a number of other migrant species were appearing at the same time, I assumed that the *S. flammea* had arrived from France on the southerly winds which had been blowing for several days. However, when a *Mythimna obsoleta* Hbn. also appeared, and bearing in mind that two *Arenostola phragmitidis* Hbn. had turned up the previous summer, I began to suspect that these *Phragmites* feeders might be of local origin, and therefore sugared and ran a Heath trap in the largest reed bed in the area. I was rewarded by finding six *flammea* and five *M. obsoleta* (one at sugar, the rest at light). So it seems rather likely that both species exist as breeding populations in the Wye area. — M. A. ENFIELD,

New Cottage, Warren Farm, Boughton Aluph, Ashford, Kent TN25 4HW.

DEFOLIATION IN NORTHAW GREAT WOOD, HERTFORDSHIRE, 1982. — Over a 25/30 acre area the oaks, birches and hornbeams in Northaw Great Wood are as bare as at midwinter. The chief culprits were *Hybernia defoliaria* Clerck, *Apocheima pilosaria* D. & S., *Operophtera brumata* L. and, of course, *Tortrix viridana* L. On a recent visit, at the foot of every tree trunk 20 or 30 larvae were laboriously ascending — to nothing. Adjacent woodland has been comparatively unharmed. — R. LOVELL-PANK, 33 The Highlands, Hatfield Road, Potters Bar, Herts EN6 1HU. 7.vi.1982.

CURIOUS BEHAVIOUR OF TWO EGG-LAYING AGLAIS URTICAE L. — On the 14th June 1982, I saw two *A. urticae* on a nettle bed, which from where I stood on a path I at first thought were *in cop*. I slowly approached them through the nettles and was surprised to find two females egg-laying on the same leaf. Their abdomens were less than a half inch apart and their heads about an inch apart. Nettles cannot be at a premium in this area, since this particular bed follows the river Nene near Northampton for at least a mile and is several yards wide all the way. — D. STOKES, 97 Mendip Road, Northampton NN5 6BA.

TROPIDIA SCITA (HARRIS) (DIPTERA: SYRPHIDAE) IN VC 69. — I took a female specimen of this rather uncommon species on the edge of Holker Moss (SD 3579) on 3 June 1981. It has previously been recorded from just south of this area in VC 60 by Skidmore (*Entomologist's mon. Mag.* 98: 184) who captured the species at Storrs Moss near Silverdale on 17 June 1956. I also have taken the species in that locality on 23 May 1964. — DR. NEVILLE L. BIRKETT, Kendal Wood, New Hutton, Cumbria, LA8 0AQ. 28.iv.1982.

APPARENT EXCESS IN NUMBERS OF FEMALE ANTHOCHARIS CARDAMINES L. (ORANGE-TIP) IN DUMFRIESSHIRE. — On the 22nd May 1982, just north of the small village of Tynron, Dumfriesshire, I came across several dozen of this butterfly on a small willow marsh which was well carpeted with Lady's Smock (*Cardamine pratensis*). The curious fact about this colony was the ratio of at least 15 females to each male, and I wish to make it clear that I was not confusing female Orange-tips with Green-veined Whites. Returning to the site ten days later not a single Orange-tip was to be seen, and I found much to my regret that all the Lady's Smock had been cropped by sheep. — R. H. MILLER, Oakmere, South Street, Garlieston, Wigtownshire.

THE CLOUDED YELLOW: COLIAS CROCEUS (GEOFFROY) IN JUNE 1982. — A single butterfly was seen on the 5th June by the road that runs parallel to the South Downs at the village of Westmeston, East Sussex. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex BN6 8NG.

THE PAINTED LADY: CYNTHIA CARDUI L. IN JUNE 1982. — On the 4th June, while walking along the lane here opposite my house, I observed a Painted Lady sunning itself on the grass verge. — T. NEWNHAM, The Victory, Staplefield, Haywards Heath, Sussex RH17 6EU [We have also received reports of the Painted Lady having been seen this June in Kent, Surrey, Dorset, Cornwall and Devon. Editor].

EARLY APPEARANCES OF *CALLOPHRYS RUBI* L. AND *PYRGUS MALVAE* L. IN WORCESTERSHIRE. — Several *Callophrys rubi* were seen on the Malvern Hills on 25th April 1982, an exceptionally early date for this species in this part of the country. *Pyrgus malvae* was seen by Mr Tom Parker at Trench Wood near Droitwich on 26th April this year, and there was another sighting of this species in Wyre Forest on the following day. — J. E. GREEN, 25 Knoll Lane, Poolbrook, Malvern, Worcs WR14 3JU.

FURTHER KENTISH RECORDS OF THE DOTTED RUSTIC: *RHYACIA SIMULANS* HUFN. — Continued spread of this species is evidenced by 1981 m/v appearances at Dungeness on 9th July and at my home on an exceedingly exposed area of the North Downs on 4th. Aug., 5th Aug., 15th Sept. (2), and 24th. Sept. Migratory insects frustratingly avoid Detling Hill, however the regularity of reported sightings of this species elsewhere in the county must surely indicate it now to be firmly established as a resident. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

Current Literature

Collins Handguide to the Butterflies of Africa by R. H. Carcasson, embracing more than 100 colour plates illustrating some 350 species and, in many cases, their early stages, together with some line-drawings of the anatomical structures of Lepidoptera, and a map of the world's faunistic regions, etc. The softback edition has XIX + 109pp., the hardback XIX+188pp., the latter containing a "simplified provisional check-list of the butterflies of the Afrotropical region." Publishers: Collins, St. James's Place, London, 1981. Price: paperback £4.95; hardback £7.95.

This beautifully-illustrated little book is — to quote its author — "meant to be no more than an introduction to the study of African butterflies." It is clearly a labour of love and as such it has considerable intrinsic merit, even if one disagrees with the use of English names for the species figured in it, in preference to the Latin ones which all serious students of African butterflies should try to memorize from the start, as most African butterflies do not have English names and the ones they do have tend to differ in the popular books dealing with them.

The book contains a few systematic oddities, such as: *Amauris albigmaculata* (on p. 72) being unnecessarily emended to *A. albimaculatus* (as if Dr. Butler, who described it, did not know his Latin genders!) the genus *Bebearia* (on p.45) being made a subgenus of *Euphaedra* — an action not supported by van Son/Vári in Pt. IV of "The Butterflies of Southern Africa" (1979: 116-117); the exclusively Afrotropical genus *Sallya* being made a subgenus of the Neotropical *Eunica* (on p. 57), even though their early stages are quite different; and the sinking of the Afrotropical genus *Elymniopsis* (on p.65) to synonymy with the Oriental *Elymnias*, despite the fact that Dr. L. D. Miller (1968) maintained the former as a distinct species in his authoritative monograph on the higher classification of the Satyridae. No mention is made by Dr. Carcasson,

in his book, of the "Noble Swallowtail" (*Papilio nobilis*) being found in Tanzania, even though its type-locality is stated to be "German East Africa, Paré" by Aurivillius in his "Rhopalocera Aethiopica" (1898:464), and I myself have collected it in the Kahé Forest, south of Moshi, in northern Tanzania. Finally, in the index, I see that y comes before x!

In his "simplified provisional check-list of the butterflies of the Afrotropical region", at the end of the hardback edition of his book, Dr. Carcasson would have done better if he had brought the tribal groups of his "Nymphalinae" in line with the more up-to-date arrangement of van Son/Vári's in Pt. IV of "The Butterflies of Southern Africa" (1979), and if he had placed all the species of the various genera, especially those of the larger genera such as *Charaxes*, *Acraea*, etc., in alphabetical order rather than in the higgledy-piggledy disorder that one finds them in at present!

Despite these criticisms, I really must recommend students of African butterflies, and anyone visiting Africa who is interested in its butterflies, to purchase a copy of Dr. Carcasson's book, since he is an acknowledged expert on African Lepidoptera, and his book contains invaluable information about them — A. H. B. RYDON

The Life of the Meadow Brown by W. H. Dowdeswell.

165pp., paper. Heinemann Educational Books Ltd., London. 1981. £5.95.

There are few books on a single butterfly and for that reason alone "The Life of the Meadow Brown" is welcome. It begins with a short section on the biology of the species, the following chapters giving an extensive account of the ecological genetic work which has been undertaken by Dowdeswell and others since 1938 — Beginning an ecological study; The mainland stabilizations; The meadow brown in Europe; Studying island populations; The significance of spotting; Conclusions and implications.

Professor Dowdeswell's knowledge and experience of the genetics of the underside hindwing spotting of these butterflies is clear. His accounts of the research findings of other workers are not so satisfactory. For example, Scali did not include Roumania in the western group of European populations as a result of his work on the enzyme phosphoglucosmutase (p. 134). There are other errors, most of them small. Schrank described the genus *Maniola*, not *Linnaeus* (p. 6). More seriously, there is little mention of the morphological variation, either wing markings or genitalic structures, on which much has been written and which offers many interesting research possibilities in the field of population biology.

While this little book is well written and presented, those interested in butterflies who purchase it expecting a text on 'the life of the meadow brown' will be disappointed: it is an account of ecological genetics research. The meadow brown just happens to be the organism which proved most suited to the problems posed. Dowdeswell writes more on the 'background to a piece of biological research' than on the significance of such phenomena as sympatric evolution, character displacement and hybrid zones. For this reason the book is probably at a level too elementary for undergraduate and postgraduate research students of biology. In spite of these criticisms, it is well worth reading. — G. T.

WANTED

I would like to hear from anyone with good quality black and white photographs of larval and/or adult stages of Blair's shoulder-knot, *Lithophane leautieri*

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CONTENTS

A Review of British Butterflies in 1981. Dr. C. J. LUCKENS ...	125
Lepidoptera in Ireland. Rev. D. AGASSIZ... ..	130
<i>Syncopacma larseniella</i> (Gozmany): A Hitherto Under-Recorded Species. R. J. HECKFORD	132
Observations on Lepidoptera in the Cevennes, Easter 1981. Dr. J. S. E. FELTWELL and G. N. BURTON	134
The History of <i>Euchromius ocellea</i> (Haworth) (Lepidoptera: Pyralidae) in Britain. B. SKINNER	139
The Immigration of Lepidoptera to the British Isles in 1981, including that of the Monarch Butterfly: <i>Danaus plexippus</i> L. R. F. BRETHERTON and J. M. CHALMERS-HUNT	141
A Consolidated History of the Discovery of <i>Charaxes gallagheri</i> Van Son, 1962 (Lep.: Nymphalidae); its Habits, Habitats and Early Stages. J. C. O. CHITTY	147
A Scuttle Fly (Diptera: Phoridae) that Appears to be a Parasitoid of a Snail (Stylommatophora: Zonitidae) and is itself Parasitised by a Braconid (Hymenoptera). Dr. R. H. L. DISNEY	151
Editorial	155
Notes and Observations:	
<i>Coleophora binderella</i> Kollar — a New Foodplant. N. F. HEAL ...	129
A Note on Two British Trachyphloeus Spp. (Col.: Curculionidae). A.A. ALLEN	129
<i>Zygaena loti scotica</i> Rowland-Brown on Mull, 1981. Rev. J. H. VINE HALL	131
<i>Allophora s.s. hemiptera</i> (Fab.) (Diptera: Tachinidae) in VC 69. Dr. N. L. BIRKETT	133
Larval Variation in the Pine Beauty: <i>Panolis flammea</i> Hbn. Dr. M. E. N. MAJERUS	150
The Delicate: <i>Mythimna vitellina</i> Hbn. in May. M. W. F. TWEEDIE ...	150
Blomer's Rivulet: <i>Discoloxia blomeri</i> Curtis. C. S. H. BLATHWAYT ...	150
<i>Palpifer sexnotatus</i> Moore (Lep.: Hepialidae) in Britain. P. J. BAKER ...	156
<i>Lagia atripes</i> Muls. & Guil. (Col.) in the New Forest. A. A. ALLEN ...	157
Larvae of <i>Anarta myrtilli</i> L.: Beautiful Yellow Underwing (Lep.: Noctuidae) and an Adult <i>Boreus hyemalis</i> L. (Neuropt.: Boreiidae) on Winter Snow in the Scottish Highlands. A. D. LISTON ...	157
The Recent Spread of <i>Apion cerdo</i> Gerst (Col.) in S. E. England. A. A. ALLEN	158
John Abbot's Drawings and Notes for a Proposed Supplement to Smith and Abbot, "The Natural History of the Rarer Lepidopte- rous Insect of Georgia" (1797). Dr. R. S. WILKINSON ...	159
Swimming Behaviour in <i>Hypera rumicis</i> (L.) (Col.: Curculionidae) R. W. J. READ	160
The Use of the Term 'Pock-mark' in Entomology. Dr. J. R. LANGMAID	161
<i>Senta flammea</i> Curtis: Flame Wainscot at Wye, Kent. M. A. ENFIELD	161
Defoliation in Northaw Great Wood, Herts., 1982. R. LOVELL- PANK	162
Curious Behaviour of Two Egg-laying <i>Aglais urticae</i> L. D. STOKES ...	162
<i>Tropidia scita</i> (Harris) (Dipt., Syrphidae) in VC 69. Dr. N. L. BIRKETT	162
Apparent Excess in Numbers of Female Orange-tips. R. H. MILLER ...	162
The Clouded Yellow in June 1982. D. DEY	162
The Painted Lady in June 1982. T. NEWHAM	162
Early Appearances of Green Hairstreak and Grizzled Skipper in Worcestershire. J. E. GREEN	163
Further Kentish Records of the Dotted Rustic: <i>Rhyacia simulans</i> Hufn. N. F. HEAL	163
Obituary: C. H. Dixon	156
Current Literature	155, 163, 164

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THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

Edited by J. M. CHALMERS-HUNT, F.R.E.S.

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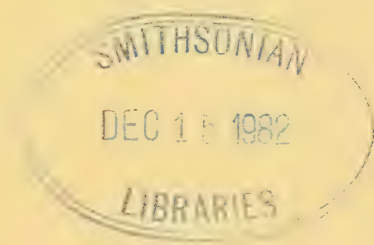
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EPIERUS COMPTUS (ERICHSON) (COL.: HISTERIDAE)
NEW TO BRITAIN

By DAVID R. NASH*

Whilst engaged in a long-term survey of the Coleoptera of Grovely Wood, an area of mature woodland near Salisbury, Wiltshire (SU 03) on August 1st, 1980, I took from under the bark of a fallen, mature beech, a single example of an Histerid beetle whose size and general facies I did not associate with any of our native, subcortical species. Having arranged to stay with my friend Mr. C. Johnson of Manchester Museum almost immediately upon my return from Wiltshire, I did not have time to study the beetle in detail, but took it with me for his comment. He suggested the beetle was *Epierus comptus* (Erichson), a determination with which I fully agreed after studying the specimen upon my return to Essex. As Manchester Museum had no comparative material, I sent the beetle to M. Jean Théron of Nîmes who kindly verified the determination. A search of the beech trunk in August, 1981, failed to reveal further specimens. There can be little doubt, however, that the species is truly indigenous since the locality is totally isolated from any possible source of importation. Although the beetle appears to be of rare occurrence throughout its range, it seems surprising that it has not been found in the New Forest which lies only some 20 km or so to the south-east of Grovely Wood.

In its typical microhabitat, *Epierus comptus* should not be confused with any of our other native subcortical Histeridae, its relatively large size (2-3mm), broad oval shape and multidenticulate front tibiae separating it easily from *Teretrius*, all *Abraeinae* and *Paromalus*. Apart from the structure of the tibiae, in colour, size and general form it bears quite a striking *superficial* resemblance to *Carcinops pumilio* (Erichson), a species which, although a member of the Denrophilinae and easily distinguished on the subfamilial characters given below, was described by Stephens in his 'Manual' (1839, p.152) as an *Epierus* before the creation of the genus *Carcinops* by Marseul in 1855. *Carcinops pumilio*, however, has seven striae on each elytron and the elytra are normally broadest at the humeral callosity and thence usually distinctly narrowed to the apex. The elytra and pronotum unite to form a slight, but evident, external angle, and the anterior tibiae are dilated with two distinct, widely-separated teeth on their outer margin, and a very large terminal hook on their inner margin. *Epierus comptus* has only six striae on each elytron and the insect is more-or-less evenly rounded from the anterior pronotal angles to the pygidium, the sides of the pronotum uniting with those of the elytra to form an almost uninterrupted curve. The anterior tibiae are gradually widened from base to apex and are armed with many small spines on their outer margin and have only a small terminal spine on their inner margin. The whole insect is also plainly somewhat broader.

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In view of the confusion which exists in most British works concerning the taxa within the Histeridae, it would seem important to define clearly the position of *Epierus* within the family and the taxonomic characters which determine this position.

Following Wenzel (1944) and the majority of modern workers on the Histeridae (but not Witzgall, 1971), the genus *Epierus* is here considered to be located within the Tribalinae and not the Histerinae. The Tribalinae may be characterised as follows: prosternal lobe present; protibiae multidenticulate i.e. with fine spines on their outer margin; antennal cavities situated in the anterior thoracic angles and at least partially closed beneath by the prosternal alae; labrum with setigerous punctures (unlike all Histerinae); antennal scape 'normal' i.e. not expanded or angulate as in, for example, *Hetaerius*. The subfamily is closely related to the Dendrophilinae, but the members of the last named taxon may be recognised by their completely open antennal cavities which are usually situated just anterior to the procoxae, the deeply and longitudinally incised prosternal alae (for reception of the antennal funicle), and their paucidenticulate protibiae.

The Tribalinae is composed of two tribes — Onthophilini and Tribalini. In Europe, the Onthophilini is only represented by the genus *Onthophilus* which contains three species easily recognised by their longitudinally keeled elytra and pronota. The Tribalini, on the other hand, is represented by two genera in Europe — *Tribalus* and *Epierus*, which may be recognised by their multidenticulate protibiae and the absence of a marginal stria on the frons. All of the European species appear to be rare and to have a predominantly southern distribution. In view of the discovery of a species belonging to a tribe whose known distribution would appear to militate against the occurrence of *any* of its species with us, it would appear useful to provide a key which includes not only *Epierus comptus*, but also others of the tribe which might occur in Britain.

Key to European Tribalini

1. Elytra with short, indistinct traces of dorsal striae. First ventral segment between hind coxae without deep longitudinal striae. Brown to black; antennae and legs reddish. Length 1.3 - 1.8mm *Tribalus minimus* Rossi (Under stones near water, especially by rivers. Southern Europe. ?Middle Europe).
- Elytra with entire, distinct dorsal striae. First ventral segment between hind coxae with a deep, longitudinal stria on each side. Black; antennae and legs brown-red. Found under bark. Very rare *Epierus* Erichson.
2. Elytra with six striae which are more deeply impressed than in the following species. Prosternal striae slightly diverging towards the front. Frons not impressed between the eye tubercles. Length 2 - 3mm *comptus* (Erichson) (South and south-west Europe; ? Middle Europe.)
- Elytra with a well-formed seventh subhumeral stria and the two innermost striae on each elytron united to form an arch in

the scutellary region. Prosternal striae strongly diverging towards the front. Frons impressed between the eye tubercles. Length 3mm *italicus* (Paykull) (South-east Central Europe; most frequent in southern Europe.)

The above key is based freely upon that of Witzgall (*op. cit.*) who questions the occurrence of *Tribalus minimus* and *Epierus comptus* in middle Europe. Winkler (1924-1932) in his 'Catalogue', however, gives the distribution of the three species as follows: *T. minimus* — Mediterranean, China; *E. comptus* — Austria, Hungary, southern Europe and the Caucasus; *E. italicus* — Italy, Austria, Hungary, and the Balkan Peninsula. M. Théron (*in litt.*) informs me that *E. comptus* appears to be of truly southern distribution in France, as he has recorded it during a lifetime's collecting from only two departments viz. du Val and the Maritime Alps. He also has specimens from Syria and Iran.

There are probably only three or four Palaearctic species of *Epierus*, the genus having its main centre in the Neotropical region with 56 described species. It is also known from North America (11 spp.), the Oriental and Indo-Malaysian region (11 spp.), and New Guinea (3 spp.). Two species — *E. antillarum* Marseul and *E. pulicarius* Erichson, have recently been recorded in association with the fauna of bat guano in Cuban caves (Decou and Théron, 1977).

Acknowledgements

My sincere thanks go to M. Jean Théron of the Musée d'Histoire Naturelle, Nîmes for his generosity in supplying reprints, much helpful correspondence, and confirmation of the identity of the *Epierus*. I also thank Mr. C. Johnson of Manchester Museum for providing the initial tentative determination. Finally, I thank the Earl of Pembroke for allowing me to study on the Wilton Estate and his Estate Manager Mr. R. H. Mellish for his unfailing help and courtesy.

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THE SCARCE SWALLOW-TAIL:
IPHICLIDES PODALIRIUS (L.) IN BRITAIN

By RONALD S. WILKINSON*

II: Haworth's *Prodromus* and *Lepidoptera Britannica*

In the initial part of this survey of recorded captures and sightings of *podalirius* in Britain (Wilkinson, 1975), I discussed the very meager evidence of the seventeenth and eighteenth centuries. John Ray reported in the posthumous *Historia Insectorum* (1710) that "in *Etruria* invenimus, atque etiam, ni male memini, in *Anglia*"; he had encountered *podalirius* during his Italian travels in the 1660s, and also, unless his memory failed, in his home island. John Berkenhout was more decisive in the first volume of his *Outlines of the Natural History of Great Britain and Ireland* (1769); *podalirius* was indeed a British insect, "Rare, in woods." Berkenhout's unsubstantiated statement was perpetuated in second (1789) and third (posthumous, 1795) editions. Haworth eventually suggested a possible source for the assertion.

Although no authentic or even supposed British specimens were known to the community of aurelians as the new century approached, the London naturalists were spurred on to find *podalirius* by their reading of such contemporary writers as Donovan and Lewin, who perpetuated the hope of its capture. Much had been learned about the lepidopterous fauna, but this knowledge was chiefly about the environs of London and the southeastern counties, and naturalists were very aware that little of the rest of Britain had been entomologically explored. One such view was that of the jeweller and collector John Francillon who wrote in 1785 to the Manchester manufacturer John Leigh Philips in hopes of securing native *podalirius*, *virgaureae*, *daplidice*, *palaeno*, *lathonia* and other gems, arguing that "as you are at such a great Distance from London, I think you must meet with specimens we have not got . . . as I find if I go only 20 or 30 miles from London I am sure to meet with something new, therefore I think my argument holds good the further the Distance" (British Library, Add. Mss. 29533, f. 63v.) The climate of opinion was enthusiastic indeed in the golden age of British entomology; surely in time *podalirius* and other desirable insects would be traced to their haunts in those vast areas distant from the metropolis.

But not until the publications of Adrian Hardy Haworth was fresh evidence introduced to suggest that *podalirius* really could be found in Britain. Haworth (1768-1833) was an accomplished botanist whose collateral pursuit of entomology led to the foundation of the third Aurelian Society and the publication of a checklist as well as a classic study of the British Lepidoptera. His seemingly curious treatment of the Scarce Swallow-tail in *Prodromus Lepidopterorum Britannicorum* (1802) and *Lepidoptera Britannica*

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(1803[-28]) is explained by the complicated printing history of these titles. In the text of the *Prodromus*, *podalirius* is among the asterisked species which Haworth had "not yet absolutely seen alive," but the species name was not printed in italics, as were those "desiderata to the cabinet" of British insects belonging to the Aurelian Society. Perhaps the reason is typographical; *podalirius*, as the first entry in the check-list, has its name in large and small capitals.

In fact we know that the Aurelian Cabinet did not have a supposed British *podalirius*. While the main text of the *Prodromus* was in press, Haworth obtained so much additional information that an addendum with a preface of its own was printed and added to the primary check-list. Haworth explained that in the interim "Real British specimens of the whole [list] have been recently and carefully examined . . . except only Pap. Podalirius and Bomb. Pinus, which are admitted upon the assurance of two . . . Entomological friends, that they once beheld alive and at large both of these rarities in Britain."

At that time Haworth was well along in the writing of the first volume of *Lepidoptera Britannica*. When the volume was published in 1803, the textual entry for *podalirius* (which had, according to Haworth, been printed some time before) did not include such an assurance by entomological friends. Haworth referred only to the two classical references to *podalirius* as British: "Exemplarium absolute Britannicum nunquam vidi. Locus in Lepidoptera Britannica autoritatibus Berkenhouti et Raii (quae ultima satis ambigua est) praecipue pendet" (p. 6.) But Haworth was able to add new and welcome information before the volume was issued. In the preface, sent to the press last and dated July 1803, he announced that "Since the body of this work was printed, my friend the Rev. Dr. Abbott of Bedford has informed me that he took in *May*last, near Clapham Park Wood in Bedfordshire, a specimen of *Papilio Podalirius* in the winged state: and that he also took in *June* last, in White Wood near Gamlingay, Cambridgeshire, the *Papilio Daplidice* (in a faded state) and likewise *Papilio Lathonia*. These are three extremely interesting species, and there is not a British specimen of any of them now extant, except the above.

"*Podalirius* . . . has not been seen alive in Britain, since the time of Ray; unless Berkenhout possessed it, which he probably might, because I have heard of his giving a high price for a rare *Swallow-tail Papilio*, said to be taken in Cambridgeshire, which was probably the identical specimen of *Podalirius* that he has described in his *Synopsis*

"An ingenious and practical Aurelian friend has informed me that he took *two sorts of swallow-tailed Papilios*, near Beverley in Yorkshire, five-and-twenty years ago, but no specimens of them are now extant; a fire which unhappily destroyed great part of his property, having consumed them likewise. Now, as we have only two swallow-tailed species in Great Britain, one of the above in all probability was *Podalirius*. I know *Machaon* . . . breeds near Beverley yet" (Haworth, 1803, xxvi-xxvii.)

Haworth's fortunate friend "the Rev. Dr. Abbott" was Charles Abbot (1761?-1817), cleric and sometime Fellow of New College, Oxford, who took the degree of D. D. in 1802. Like Haworth, Abbot was a botanist and Fellow of the Linnean Society; his *Flora Bedfordiensis* was published in 1798. An Abbot specimen of *podalirius* is still extant, in the Dale Collection, Hope Department of Zoology (Entomology), University Museum, Oxford. It is in somewhat poor condition, with antennae missing, and is labelled "Clapham Park wood May - 1803? Nr. Bedford Dr. Abbot? Mus. Abbot" in the hand of James Charles Dale (1792-1872), a respected figure in nineteenth-century British entomology (Walker, 1907). The question marks imply that at some time Dale had doubts about the provenance of the insect which he obtained as part of Abbot's cabinet (purchased in 1817: Dale, 1830).

The Abbot specimen is the only *podalirius* in the Dale Collection, which was bequeathed by Charles William Dale to Oxford with the diaries and records kept by his father and himself. One of the manuscripts mentions the capture. J. C. Dale compiled an "entomological calendar" from Abbot's original notes (Walker, 1907), and I am informed by Miss Pamela Gilbert, British Museum (Natural History), that the page containing the records for 1803 includes the entry "May-? Papilio Podalirius? Clapham-Park wood Bed's -." Again those troublesome question marks appear. The elder Dale seems to have had no problems with the attribution of Abbot's 1803 capture of *daplidice* and *lathonia*; the specimens are in the Dale Collection ex Abbot, and bear Dale labels without question marks (Walker, 1907). Perhaps Abbot had not specifically labelled his *podalirius* as being the May 1803 capture described to Haworth.

At any rate, in late 1838 or early 1839 Dale assured Peter Rylands that he then possessed the Abbot *podalirius* to which Haworth referred, "a ♀ not in very fine order" (Rylands, 1839), presumably the same specimen now in the Dale Collection. And Dale, one of the more knowledgeable collectors of the period, cited the Abbot capture as part of the extensive information about *podalirius* which he furnished to Rylands and which the latter claimed would "convince any unbiassed person that *podalirius* ought to be entered in the British Fauna." Rylands (1839) also revealed that "Mr. Haworth told Mr. Dale that 'Dr. Abbott had informed him [Haworth] by letter of his having seen *podalirius* two or three times' previous to the capture."

There is no reason to suppose that Charles Abbot's claims were spurious - or, to phrase that conclusion in a more guarded manner, we have no evidence that he deceived his entomological friends. Certainly he recorded a number of Lepidoptera which were considered exceptional prizes, and all within a relatively brief period of time; his good fortune was not limited to the capture of *podalirius*, *daplidice* and *lathonia* (Haworth, 1802, 1803). However Abbot was considered to be a trustworthy naturalist, and his colleagues called attention to his successes as examples of the progress of British entomology. One may argue that those were more credulous times, in which entomologists accepted one another's records without the

more careful scrutiny which would characterize the Victorian era. That was often true, but even so, Abbot must be considered innocent in the absence of proof to the contrary; and, as we shall see, a number of other collectors quite certainly did take *podalirius* in England after his death.

In his 1803 preface, Haworth chose not to name the "ingenious and practical Aurelian friend" who captured "*two sorts of swallow-tailed Papilios*" near Beverley, Yorkshire a quarter of a century before. But he continued to believe his friend's account; writing of *podalirius*, Samouelle (1819) reported that "Mr. Haworth is yet in hopes of receiving indigenous specimens from Yorkshire." Haworth returned to the subject of *podalirius* in 1828 when preparing a postscript to be published with the sheets of the fourth part of *Lepidoptera Britannica*, which had been printed a number of years before. *Inter alia*, Haworth related that "Mr. Rippon of York has informed the writer that he saw the wing of a *P. Podalirius* found in Yorkshire" (p. 588.)

Rippon's identity has been a mystery until now, and indeed he has led two historians (the late P. B. M. Allan and myself) on a merry chase. He appears in the recently discovered manuscript 'articles of incorporation' of Haworth's Aurelian Society as "John Rippon, Precentor's Court, York," the twelfth Aurelian to sign the document. So quite probably John Rippon was the "Aurelian friend," and he certainly was the Rippon of the *podalirius* wing. J.C. Dale (1830) credited the Beverley captures and the account of the wing to "Mr. Ripon?" several years before Haworth's death, and we may suppose that Dale was not corrected by his old friend, for Rylands (1839) unhesitatingly named "Mr. Rippon, of York" as the collector at Beverley, *ca.* 1778, and one suspects from the first paragraph of Rylands' paper that he had his information from Dale. The circumstances of the supposed captures were repeated again and again in the literature, but the actual facts are scanty enough. We now know Rippon's given name and address, but nothing has been discovered about his collecting activities and the specimens which were consumed by fire. Hopefully a search of local records will reveal more.¹

By the time Haworth wrote his 1828 postscript he was able to record several more captures of *podalirius*. These properly belong to a third part of this survey, which will begin with the curious adventures of the Rev. Frederick William Hope and conclude at mid-century.

¹John Rippon of York was not John Rippon, D. D. (1751-1836), Baptist divine and compiler of the famous collection of hymns, who served his London parish for nearly 64 years and who appears in the *Dictionary of National Biography*. Our Rippon was not Precentor of York Minster, and the Dean of York, who graciously conducted a search of the appropriate records, discovered no official affiliation with the Minster. Precentor's Court, earlier called Precentor's Lane, opens into High Petergate, and evidently Rippon occupied one of the private residences in the Court.

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THE BRIMSTONE: GONEPTERYX RHAMNI L. APPARENTLY IMBIBING AT HYDRANGEA FLOWERS. — On September 6th, 1980, I was surprised to see a female brimstone butterfly alight upon a sterile flower of the head of a Hortensis type *Hydrangea* with pale blue flowers, and probe for some time the calyx tube. This behaviour was repeated on several flower heads before the insect moved on to the bright pink flowers provided by a hedge of *Lathyrus latifolius*, the everlasting pea, which over the years has been noted as the most favoured flower attraction for this species here in my garden. Two days later the visits were repeated.

So far as I am aware *Hydrangea* flowers of this type do not produce nectar, neither were the flowers wet, nor host to aphides. Work by D. Ilse quoted in *The Pollination of Flowers* by Proctor and Yeo, 1973, showed that the brimstone's natural flower preference was for those coloured blue, and that approach was visual rather than olfactory.

This explains the visit to the *Hydrangea*, but what is not clear are its lengthy visits with apparent feeding. Regarding colour selectivity, violet and purple are also attractive to the brimstone, according to Ilse, while few visits are made to red, orange and yellow flowers. In my garden another pink flower commonly attracting the brimstone is *Sedum spectabile*, although I associate this more with *Aglaia urticae*, the small tortoiseshell, which Ilse finds most attracted by flowers of yellow or blue colouration, and which also use a visual approach — B. K. WEST, 36 Briar Road, Bexley, Kent.

BUTTERFLIES IN EASTERN SWITZERLAND 1980,
WITH A NOTE ON *EREBIA PLUTO* DE PRUNN.

Dr. C. J. LUCKENS*

In mid-August 1980 Dr. T. W. Tolman and I, accompanied by my two older sons, spent several days at Pontresina in the Engadine. The weather was unremittingly wet as we travelled through France but, apart from one unsettled day, we had beautiful weather for the duration of our stay in Switzerland.

In spite of the late date in the Alpine butterfly season, we saw a good variety of species, including many that we had met with there over a month earlier the previous year.

The two *Erebias*, *melampus* Fuessl. and *tyndarus* Esp. for example, were swarming in the pastures of the Val Roseg on August 17th and many were in excellent condition. Flying with them were *Coenonympha gardetta* de Prunn. and the fritillaries *Fabriciana niobe* L., *Argynnis aglaia* L., *Brenthis pales* D. & S., *B. napaea* Hoffmannsegg, and *Clossiana titania* Esp. I observed a female *titania* ovipositing on the dry moss at the base of a drystone wall where *Viola ssp.* grew among the crevices. *Aricia nicias* Meig. was locally common at the foot of one stony slope and we saw many *Colias phicomone* Esp. and *Cyaniris semiargus* Rott. — all of these being butterflies we had encountered in early July 1979. Other species seen included a few *Polyommatus eros* Ochs. and *Erebia montana* de Prunn. (usually at the edge of the screes) and excellent numbers of *Heodes virgaureae* L. of a small bright form which frequented the woodland clearings.

In one such clearing, in 1979, we had found *Euphydryas intermedia* Menetries and I was very keen to look for the early stages of this local species. To my surprise and delight I found a batch of very young *Euphydryas* larvae on a small web at the tip of a *Lonicera* leaf on one of the first bushes investigated. After this early success no more were found in spite of intense search by my sons who were spurred on by promises of generous rewards. Approaching the Roseg Hotel near the head of the valley *Parnassius phoebus* F. became quite common, favouring especially the rocky ground beside the river.

This beautiful butterfly was also conspicuous on the higher slopes of the Albula Pass which we visited on three occasions — the 18th, 20th and 21st August. The 20th was the day of rather uncertain weather and we were forced to descend to the meadows around Preda to escape the cold misty rain at the top of the pass. Here *Erebia pronoe* Esp. was found and a few *Erebia manto* D. & S. (not the high altitude f. *pyrrhula* but similar to the type) as well as *Palaeochrysophanus hippothoe* L. *C. titania* and a single fresh *Mellicta athalia* Rott.

The other two days were brilliantly sunny and we spent most of our time at around 6000ft a little way down the north side of the pass. *Colias palaeno* L. was flying swiftly over the *Vaccinium*-

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covered slopes and a few of those netted were surprisingly still in fresh condition. A pair of *Vacciniina optilete* Knoch was also noted. On a patch of alluvial mud we encountered a swarm of the little alpine blues *Agriades glandon* de Prunn. and *P. eros* and we were able to select a small series of each of these species. These mud visitors were almost exclusively male however, and we had to work hard to find the females on the nearby grass slopes. The dark, violet-suffused females of *B. napaea* were also frequent in this riparian habitat. Still higher up on the scree slopes a few *E. pronoe* and one or two *Erebia gorge* Huebner flew with worn but very active *Pontia callidice* Huebner, but the prize was the large sooty *Erebia pluto* de Prunn. We risked multiple fractures pursuing these magnificent butterflies over the unstable grey stones. *Pluto* had the habit of inconsequentially skipping down as if to investigate the waiting net only to veer off suddenly when just beyond range. Then the stones would clatter and ring under foot as the unequal chase began! One female however settled a few feet in front of me on the scree and curving her abdomen she deposited an *ovum* on the underside of a small rock. I marked this and then searched carefully all around but the nearest living blade of grass I could detect was at least ten feet away. Occasionally *pluto* would approach the grassy areas at the edge of the rock slides but as soon as the insect found itself away from the scree it would show signs of alarm and a much faster flight pattern would be maintained until it found itself once more over the bare stones.

I have noticed a very similar habit among the males of *Erebia lefebvrei* Boisd. on the screes of the Sierra del Cadi in Spain. This *Erebia* occupies the same ecological niche in the Pyrenees and adjacent Sierras of northern Spain as does *pluto* in the Alps. Both butterflies are intensely dark and therefore perhaps share the facility of quickly absorbing heat reflected from the pale rock surfaces of scree. Rapid transfer of energy in this way may be essential to efficient flight at the high, relatively cool altitudes that both species frequent.

LEPIDOPTERA AT CANNA IN 1982. — The arrivals of the migrants here has been as follows: *Cynthia cardui* L., first seen on 9th June; a number of larvae found later, *Vanessa atalanta* L., first seen 11th June; others seen later, and larvae found; now frequent around buddleia in the garden. *Autographa gamma* L., first seen 9th June, others later; a pupa found on a thistle. *Nomophila noctuella* D. & S., in trap on 29th July.

All the resident butterflies have flourished in the hottest and driest summer I can remember here; this particularly applies to *Pieris napi* L., *Argynnis aglaja* L., *Boloria selene* D. & S., *Pararge aegeria* L. and *Hipparchia semele* L. On the other hand, moths have been less numerous, and trap catches disappointing. The only interesting capture has been a specimen of *Deilephila elpenor* L. on 25th June. Recently there has been an outbreak of *Cerapteryx graminis* L., and visitors repeatedly report seeing *Abraxas grossulariata* L. which has been common this year. — J. L. CAMPBELL, Farm Office, Isle of Canna, Hebrides.

SOME SAWFLIES FROM WHITLAW MOSS NATURE RESERVE, SOUTHERN SCOTLAND, WITH A SPECIES NEW TO BRITAIN (HYM.: SYMPHYTA)

By ANDREW D. LISTON*

Abstract

30 spp. of sawfly are recorded from Whitlaw Moss National Nature Reserve in Southern Scotland. *Pristiphora micronematica* Malaise is an addition to the known fauna of the British Isles. 7 other rare or local species are discussed.



Fig. 1. Penis valve of male *Pristiphora micronematica* Malaise

Introduction

On 22.5.81 and 3.7.81 Mr. J. M. Nelson and the author visited Murder and Blackpool Mosses (NT 505285 and NT517290) in order to sample the sawfly fauna. Aided by good weather during these visits, several noteworthy species were found.

The two mires form part of the Whitlaw Moss National Nature Reserve, situated in Roxburghshire and Selkirkshire. Their interest lies in their wide range of rich-fen communities fed by base-rich ground water. These range from closed *Salix* carr (mainly *cinerea* with some *pentandra*) to open bryophyte-rich carpets and tall-herb communities. Though the reserve was created primarily to safeguard the unique plant communities, several interesting insect species have since been found there: for example, *Coniosternum tinctinervis* Becker (Diptera, Scathophagidae) and *Hydroporus glabriusculus* Aube (Coleoptera, Dytiscidae) were first found in Britain at this locality (Nelson, 1972; Sinclair, 1976).

A considerable boreal element appears to be present in both flora and fauna: e.g. *Dactylorchis purpurella* and *Corallorhiza trifida* (Orchidaceae), certain *Carex* spp. (Cyperaceae) and a large number of insects. This can be explained partly by the relatively high altitude (274m.) and partly by the relict nature of the mosses. *Pristiphora micronematica* Malaise, here introduced to the British list, together with *Phyllocolpa acutiserra*, *P. excavata* and *Nematus*

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monticola are all species with markedly boreal distributions. The other sawflies have wider distributions, occurring throughout most of northern and central Europe. All of the boreal sawfly species so far recorded at Whitlaw are associated with the *Salix*, particularly *S. pentandra* which itself is a typically northern plant. Of the species feeding on the plants in the herb communities, most are widespread, but a few are more characteristically southern in distribution (*Allantus calceatus*, *Perineura rubi*). It is interesting that all of the sawflies found at Whitlaw occur in Finland (Saarinen, 1950) and most reach at least as far north as southern Lapland.

All but three specimens were captured during the visits made on 22.5 and 3.7.81, mostly by sweeping. The three others were trapped in orange bowls during May 1980 by Mr. Nelson. The material is now in the author's collection.

Species new to Britain

Pristiphora micronematica Malaise, 1931

= *Lygaeophora leucostoma* Lindqvist, 1952

1 ♂ from *Salix* 22.5.1981.

Full descriptions of both sexes of this species are given by Lindqvist (1952), as *L. leucostoma* Lindqvist. The British specimen was at first thought to be the male of the related *P. lanifica* (Zaddach & Brischke), recently added to the British list on the basis of some females from Edinburgh (Liston, 1981). Further examination showed that it could not possibly be a male *lanifica*, but that it was likely to be a representative of *micronematica* Malaise. It corresponds well with Lindqvist's description of *leucostoma*, and the structure of its penis valve confirms its identity. The sawfly will key to the "C Groups" in Benson (1958). *P. breadalbanensis* (Cameron) and its close allies bear a superficial resemblance to *micronematica*, but examination of the penis valve (Fig. 1) will safely separate the latter.

Below are summarised the most important external characters for the separation of *P. lanifica* and *P. micronematica* as set out by Lindqvist and checked as far as possible against the specimens available to me:

lanifica (Z. & B.) ♀ and ♂. Always with pale marked mesopleura. Underside of abdomen usually with several sternites pale marked. Mesopleura as densely sculptured as lateral lobes of mesonotum. Claws bifid. 3rd and 4th antennal segments subequal in length.

micronematica Malaise ♀ and ♂. Mesopleura always completely black. Underside of abdomen completely black except for hypopygium. Mesopleura feebly sculptured and more shining than lateral lobes of mesonotum. Claws with small inner tooth. 3rd antennal segment much shorter than 4th.

Differences in the saw and sawsheath of the female and the penis valve of the male are also useful (see figures in Lindqvist, 1952). Lindqvist (*l.c.*) records that the femora of most of his Finnish specimens are black. Those of the Scottish male are completely

pale. Variation of this sort is widespread in the Nematinae and seldom of significance.

Benson's (1958) "C Groups" of *Pristiphora* comprise an ecologically fascinating assemblage of smaller, unrelated species-groups whose only common characteristics are their boreal and arctic-alpine distributions and their (usually) sculptured mesopleura. Benson's synthetic groupings of *Pristiphora* species are nevertheless very convenient. More formal division of the genus into several genera or subgenera (eg. Konow, 1902 & 1904: Lindqvist, *l.c.*) has invariably proved inadequate because such groupings have mainly been based on arbitrary ranges of similarity in genitalia. Neither the importance of other morphological characters nor the value of biological data have been taken into account, and one often finds that species with very similar saws for example, can not possibly be closely related. I can see no useful purpose in the retention of these so-called subgeneric names, which in the past have been applied to mere species-groups. Though Lindqvist (*l.c.*) was able to define his subgenus *Lygaeophora* in both sexes using fairly distinctive features (Liston, 1981), I follow Smith (1979) in treating it as synonymous with *Lygaeonematus* Konow, which itself is best treated as a synonym of *Pristiphora* Latreille. In such a large genus as this, synthetic groupings of species such as adopted by Benson (1958) are less cumbersome than the use of subgeneric names of doubtful validity.

Malaise (1931) described *micronematica* from Kamtchatka. Lindqvist (1952) erected a new species, *leucostoma*, for Finnish specimens which had previously been called *micronematica* by various authors. Lindqvist (1971) realised that his *leucostoma* was a form of *micronematica* and synonymised the species. Since the publication of Lindqvist's (1952) revision, *P. micronematica* has been recorded under the name *leucostoma* in northern Canada by Benson (1962). Further records indicate that *micronematica* occurs in Swedish Lapland, Norway and northern Russia (Kontuniemi, 1965). It appears to be the commonest species of the group in Finland, and is particularly abundant in the southern provinces. It is therefore not a particularly surprising addition to our fauna. Perhaps *micronematica* will be found to be a more widespread species in Britain than the less easily overlooked *P. lanifica* (Z. & B.).

Hellén (1975) wrongly synonymised *micronematica* with *lanifica*, but there are numerous biological differences apart from those morphological ones mentioned above. The larva of *micronematica*, briefly described by Lindqvist (*l.c.*), is a solitary leaf-edge feeder on smooth-leaved boreal *Salix* spp. Those of *lanifica* are semi-gregarious leaf-edge feeders on rough-leaved *Salix* (Liston, in press).

Species of special interest

Empria pumila (Konow)

1♀ 22.5.81. Benson (1952) records this species in various southern English counties, Ireland, Perthshire and Invernesshire.

Allantus truncatus (Klug)

1♀ May 1980 (Nelson), trapped in orange bowl placed in *Phragmites*. 1 ♂ 3.7.81. Benson (1952) records this species as uncommon in S. England, and notes that Cameron took it at Rannoch, Perthshire. The Whitlaw female has an entirely black abdomen, thus causing it to resemble *A. melanarius* (Klug), but it does not seem to differ in any other way from typical white-banded *C. European truncatus* females. Conversely, the male, which normally has a completely black abdomen, in this case has its 5th tergite white-marked.

Amauronematus fallax (Lepeletier)

1♀ 22.5.81. Probably local throughout Britain and Ireland, but there are no previous records for Scotland south of Perthshire.

A. fasciatus (Konow)

1♀ 22.5.81. Local and scarce north to Invernesshire, and in Ireland (Benson, 1958).

Phyllocolpa acutiserra (Lindqvist)

1♀ 22.5.81. Single previous British specimen is from Isle of Rhum (Benson, 1958). Whitlaw seems a surprising locality for this species, but the saw of the specimen is unmistakable. *P. acutiserra* is typically arctic-alpine, occurring in Norway, Finland, Scotland, Austrian Tirol, North Russia and Canada. Vikberg (1970) records *Salix lapponum*, *S. glauca* and *S. hastata* as foodplants, but the range is probably wider.

P. excavata (Marlatt)

1♀ 22.5.81. Previously in Yorkshire, Roxburghs., W. Lothian, Midlothian, Stirlings., and Ireland.

Nematus monticola (Thomson)

1♀ 22.5.81. Previously known from Malham Tarn (Yorks.), Clydesdale (Benson, 1958) and Moor House NNR in Westmorland (Nelson, 1971). Rare in Europe at widely separated localities from northernmost Lapland (Inari) to the Yugoslavian Mts. (Kosovo).

Other species

Trichiosoma lucorum (L.), *Dolerus cothurnatus* Lepeletier, *D. aeneus* Hartig, *D. niger* (L.), *Empria alector* Benson, *Allantus calceatus* (Klug), *Eutomostethus luteiventris* (Klug), *Monophadnoides geniculata* (Hartig), *Perineura rubi* (Panzer), *Tenthredo moniliata* Klug, *T. velox* F., *Sharliphora amphibola* (Förster), *Pristiphora pallidiventris* (Fallén), *P. sp. near quercus* (Hartig) (*Betula* "race"), *Amauronematus tillbergi* Malaise, *A. histrio* (Lepeletier), *Euura mucronata* (Hartig), *Phyllocolpa coriacea* (Benson), *Pontania col-lactanea* (Förster), *P. bridgmanni* (Cameron), *P. viminalis* (L.), *Nematus bergmanni* Dahlbom.

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G. R. SUTTON. — As we go to press, we hear of the sad news of the death on the 3rd of June, in the Southend General Hospital after a brief illness, of Mr. Gresham Rhodes Sutton of Westcliffe-on-Sea, Essex. Born on the 21st of May 1898, Mr. Sutton was thus 84 years of age at the time of his death. His interests were in the lepidoptera and coleoptera. — J. M. C.-H.

ARGYRESTHIA TRIFASCIATA STAUDINGER, 1871
(LEP.: YPONOMEUTIDAE) IN BRITAIN

By A. M. EMMET*

Mr. R. A. Softly took an example of this species in a Heath actinic light-trap on or about the 3rd of June, 1982 at Hampstead. The trap is situated on the top balcony of a block of flats, facing south and overlooking the British Rail station of Hampstead Heath (map reference TQ 274856). It is some 40 feet above ground level and 20 or 30 feet away from the crowns of sycamores and a poplar. Although canopy-feeders come to this elevated trap (*Microthrix similella* (Zincken), seldom encountered anywhere, turned up once on the 7th of July, 1980), in certain weather conditions small low-flying species also occur in numbers; for example, as many as 30 *Lyonetia clerkella* (Linnaeus) have appeared on a single night. It follows that the unusual siting of the trap is not necessarily of significance for this capture.



Fig. 1 *Argyresthia trifasciata*, Hampstead vi.1982. Enlarged approx. x 8.

The trap is run regularly by Mr. Softly for recording purposes. When a species of Microlepidoptera turns up which belongs to a family with which he is not familiar but is distinctively enough marked to be readily identifiable, he retains it for reference to a fellow entomologist. *Argyresthia trifasciata* fell into this category; it is described by Frey (1880: 385) as a charming little creature which is extraordinarily easy to recognise. Mr. Softly showed it to me and when I expressed the opinion that it was an *Argyresthia* new to Britain, he left it with me for further research. I described it over the telephone to the Rev. D. J. L. Agassiz, who is specialising in the Yponomeutidae, and he at once suggested that it was *A. trifasciata*. I then sent the moth to the British Museum (Natural History), where Dr. J. D. Bradley confirmed the determination.

The species was discovered by Anderegg in the Swiss canton of Valais and described by Staudinger (1871:425). It has since been found also in the French Alps and in Ardèche, a department in the extreme south-east of the Massif Central (Lhomme, 1939-46).

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According to Lhomme, the foodplants are *Juniperus sabina*, *J. phoenicea* and *J. thurifera*. All three occur in Britain as naturalised introductions, having been first imported in 1548, 1683 and 1752 respectively. However, only *J. sabina* thrives; it is to be found in many gardens and is commonly stocked by nurserymen (Dallimore & Jackson, 1923: 259). Fresh supplies are probably obtained periodically from the Continent and *A. trifasciata* may have been accidentally imported on its foodplant. This explanation has already been offered for the presence of *Gelechia sabinella* Zeller (Gelechiidae) which feeds on the same foodplant (Agassiz, 1978). There is a nursery stocking juniper species only a quarter of a mile from the site of the trap, which may have been the source of this specimen; its supplies are obtained from a grower in Hertfordshire but it is not yet known whence the latter firm acquires its stock.

Lhomme does not say how the larva feeds. We have five species of *Argyresthia* in Britain which have our native juniper (*J. communis*) as their host plant; two feed in shoots, two mine needles and one feeds in late summer in green berries. One of these methods of feeding is likely for *A. trifasciata*. The adults fly in France from late April until June, possibly rather too early for the larva to have mined young shoots. The species is not listed as a leaf-miner by Hering (1957), but this may be due to absence of information and is not conclusive. This leaves the fruits as marginally the most likely pabulum.

Description of the imago

Wingspan c. 9mm. Head with vertex rough-haired, white. Antenna whitish, annulated black, the annulations obsolescent beneath; labial palpus pale golden. Thorax and tegulae glossy golden. Forewing glossy golden; white fasciae at one-fifth and two-fifths, both direct, and one at three-fifths, inwards-oblique; irregularly-shaped subapical and tornal white spots tending to coalesce to form a fourth, inwards-oblique fascia; subcircular white spots on costa at one-half and at apex; cilia concolorous with wing. Hindwing pale grey.

The species should follow *Argyresthia ivella* (Haworth) and be given the log book number 409a (Bradley & Fletcher, 1979).

Mr. Softly, at whose request I am writing this paper, has presented the specimen to the British Museum (Natural History). He is to be congratulated on making this interesting and attractive addition to the British list. My thanks are due to the Rev. D. J. L. Agassiz and Dr. J. D. Bradley for making and confirming the determination respectively. I also thank Dr. Bradley for the photograph, and Mr. E. S. Bradford for preparing it for publication.

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AGONOPTERIX ASTRANTIAE HEINEMANN IN HAMPSHIRE. —

On 9th June 1982 I found six larvae of this species on *Sanicula europaea* in a beech wood near East Meon. The moths emerged from 25th - 27th June, and this is the first record of *astrantiae* in Hampshire. During the last instar many of the larvae bite partially through the upper part of the leaf stalk causing the leaf to wither, and then continue to feed in the wilting folded leaf. This may explain why so few larvae had previously been found, because the leaf then droops below the level of the healthy leaves of the foodplant necessitating careful parting of the leaves in order to find the larvae. This habit was observed independently this year by H. N. Michaelis. — Dr. J. R. LANGMAID, 38 Cumberland Court, Festing Road, Southsea, Hants PO4 ONH.

LOW NUMBERS OF LEPIDOPTERA IN 1981. — My impression in Cumbria is that 1981 was about the poorest year for Lepidoptera on record. Admittedly owing to advancing years I did far less hunting around than I used to do; but it is certainly indisputable that when I was out and about I could find very few specimens of even the commoner species. For instance, on a visit to an area of limestone grassland near the Fairy Steps, Beetham, where there is usually an abundance of Lepidoptera, in warm sunshine on July 12th the scarcity was most depressing. I expected to find *Aricia artaxerxes salmacis* Stephens still out in good numbers, but saw just one. Usually in this area of what used to be South Westmorland, this butterfly is out from about June 15th to July 20th. Other butterflies were very scarce, but two moths helped to save the situation, *Zygaena filipendulae* L. and *Phoethedes captiuncula* Treits., both of which were in good numbers. I even got a photograph of *P. captiuncula* sitting on a leaf — I had almost despaired of ever managing to photograph this moth, for when it is not wildly flying it usually dives deep down in the grass and is disturbed at the slightest touch of the vegetation — a most elusive insect.

The same story of paucity is true of my Mercury Vapour Trap, which I have admittedly operated only spasmodically. But on nights which I selected for operation the results were very sparse, and there were no surprises except negative ones! For instance, I never saw one *Amathes xanthographa* D. & S. Perhaps the nearest to a positive surprise was a *Dasympolia templi* L. on October 1st. Does my experience tally with that of most other Lepidopterists? — Rev. J. H. VINE HALL, "Rivendell", 3, The Green, Melmerby, Penrith, Cumbria CA10 1HG.

FLYING CROOKED
FLYING CROOKED

183

By J. S. PHILLPOTTS*

The butterfly, a cabbage white
(His honest idiocy of flight)
Will never now, it is too late,
Master the art of flying straight,
Yet has — who knows as well as I? —
A just sense of how not to fly:
He lurches here and here by guess
And God and hope and hopelessness.
Even the acrobatic swift
Has not his flying crooked gift.

Robert Graves

The enormous area of a butterfly's wings must be there for some better purpose than advertisement to its mate. It also advertises itself to all the birds in the neighbourhood and is often attacked by them.

One advantage of these large wings is that they allow the butterfly to use relatively slow, deliberate wing beats, which are under excellent control. A meadow brown will fly through the close stems of tall grass without touching them and butterflies can sail straight through fruit cage netting and out the other side without hesitation. Both these feats require co-ordination between eye and wing of a high order.

This leads on to a flying butterfly's tactics as it is attacked by a bird. Like the slow flying enemy aeroplanes in the last war it is more manoeuvrable than they are 'it lurches here and here by guess' and they miss it over and over again. When they do manage to strike from above it closes its wings in the bird's face and the bird may remove a symmetrical portion of both wings or leave a mark as it tries to obtain a better grip and the butterfly escapes. (E. B. Ford, *Butterflies*, plate 10f and p.244). In attacks from the side only one wing is used for protection and a piece may be removed. The bird frequently attacks from the rear where the body is least well protected by the wings (apart from in front, which has its own disadvantages) but even then it usually escapes by its flying crooked gift. If only small areas of wing are missing it can avoid capture but if sufficient had been removed its agility is reduced and eventually it is caught and brought to the ground to be torn to pieces and eaten. Small butterflies are obviously at more risk from aerial attacks from birds, and in fact they usually fly near the ground.

These tactics give good defence against birds, which fly fast. (Do herons ever take butterflies on the wing? With their long necks and

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beaks they might well do so if their paths coincided) but they are not so good against bats whose slower flight has something of the same character as the butterflies', and perhaps this is one reason why so few butterflies fly at night.

Summary

Butterflies' large wings have obvious disadvantages but two chief advantages:—

- (1) To attract mates. At a distance sight is often a better advertisement than scent, though this is disputed.
- (2) As a defence against attacks by birds. The mechanism of the latter is discussed.

Acknowledgements

I should like to thank E. B. Ford and Collins Publishers for permission to quote from *Butterflies*. I also acknowledge Robert Graves' permission to include the poem "Flying Crooked" from his *Collected Poems*.

TWO FURTHER RECORDS OF *BARYPEITHES SULCIFRONS* (BOHEMAN) (COL.: CURCULIONIDAE) FROM WEST CUMBRIA. — My first record of *Barypeithes sulcifrons* (Boheman) from Cumbria was based on one dead specimen found at Silecroft, (1979, *Entomologist's Record*, 91: 27). I can now add two further localities for this species from the county. Several live adults were taken by general sweeping along the edge of a field near Kirksanton Haws, SD13/79 on June 16th 1980. The vegetation at this site consisted mainly of grass, with a good deal of *Rumex acetosella* L. and *R. acetosa* L. My second locality was on Black Come, SD13/84. On March 13th 1982 I found one specimen resting on the undersurface of a small flat stone lying among short grass turf and Bilberry, *Vaccinium myrtillus* L., at about 411 metres on a steep south east facing slope, above Black Crag.

Some remains of dead specimens of *B. sulcifrons* were also found at the base of other bulberry plants growing close by. It is possible that these individuals may have fallen prey to some large spiders which were observed under stones in the immediate vicinity.

On a previous visit to Black Combe I collected a few other interesting beetles and among these was the typical montane weevil, *Otiorhynchus nodosus* (Muller, O. F.). On 4th April, 1980, I took a few individuals from under small stones and also at the base of heather, *Calluna vulgaris* (L.) Hull, in an area of boulders and sparse vegetation near the summit at about 480 metres. *O. nodosus* was recorded from the county by F. H. Day, (1923, *Trans. Carlisle Nat. Hist. Soc.*, 3: 99) and specimens in the Day collection held in the Tullie House Museum at Carlisle are from Grisedale Pike, (NY12), Cumrew Fell, (NY55) and Crossfell. So far I have not discovered any published records of *O. nodosus* from the extreme west of the county. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria CA28 8RF.

A REVIEW OF THE INDIGENOUS BRITISH
MACROLEPIDOPTERA FOR 1981

PAUL SOKOLOFF*

This review is intended to complete the quartet of annual reviews covering the butterflies, microlepidoptera, macrolepidoptera and immigrants. 1981 will be remembered for the generally dismal nature of the season for larger moths, but a number of features deserve mention – the publication of two new books, the discovery of a Geometrid moth new to Britain, and the coming of the Wildlife and Countryside Act 1981. This act probably represents the most sinister development to affect entomologists for many years. Five species of moth are “protected” – *Thetida smaragdaria* F. (Essex emerald); *Zygaena viciae* D. & S. (New Forest burnet); *Pareulype berberata* D. & S. (barberry carpet); *Acosmetia caliginosa* Hbn. (reddish buff) and *Siona lineata* Scop. (black-veined moth). Fines of up to £1000 can be levied for each specimen taken or possessed illegally. Offending entomologists therefore risk almost certain penury and possible incarceration from the injudicious use of their nets in certain localities. A more objective view of the Act is given by Stubbs (1982 a and b) and Lonsdale (1982).

Two major publications dealing with the macrolepidoptera were launched in 1981, the first being “An Identification Guide to the British Pugs” – a much needed volume featuring excellent colour plates, informative text and genitalia drawings. The second was a limited edition of “The Larvae of the British Lepidoptera not Figured by Buckler”, by G. M. Haggett. 35 colour plates illustrate some 78 species or sub-species, with detailed text. Both were published by the BENHS. A number of interesting papers have appeared in other journals – a detailed discussion of genetic explanations for all-female broods of *Philudoria potatoria* L. is worth reading (Majerus, 1981a). Dr Majerus also discusses the genetics of the attractive form *subroseata* of *Cyclophora albipunctata* Hufn. (Majerus, 1981b). Foodplant and parasite differences between our two copper underwing species *Amphipyra pyramidea* L. and *A. berbera svenssoni* Fletch. are dealt with by Shaw (1981). Of passing interest to British entomologists are two Danish papers (Kaaber, 1980 and 1981) on the bionomics and systematics of some Danish *Eupithecia* species. These detailed, illustrated papers conclude that *Eupithecia gooseniata* Mab. is only a sub-species of *E. absinthiata* Clerck, and that *E. fraxinata* Crewe is a sub-species of *E. innotata*.

From a field entomologist's point of view the year as a whole could be described as “poor”, although little weight can be given to such subjective descriptions. The only quantitative data that can be offered stem from a static trap in Kent which yielded 9.6% fewer species than 1980 and 9% fewer individuals. Some correspondants were pleased to report depressed numbers of *Noctua pronuba* L. and *Apamea monoglypha* Hufn., although some species were noted

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in enhanced numbers — for example *Mormo maura* L. in Southern Counties and *Tyria jacobaeae* L. in Northern England. *Clostera anachoreta* D. & S. became newsworthy in 1979 when a significant number of individuals and larvae were captured at Dungeness, Kent. More were seen in 1980, and many thousands of bred larvae were released at Dungeness that year. Very few were reported in 1981, all during August with no reports of first brood specimens of this supposedly bivoltine species. Because of the numerous releases it is impossible to assess the status of this species but presumably it can be classified as temporarily established following an immigration in (?) 1978. In a broadly similar category is *Deltote bankiana* F. which was noted again from Sandwich in Kent.

In times of general ecological doom it is pleasing to see insects extending their range and colonising new habitats. *Idaea vulpinaria* H.-S. continues to spread into Kent and Essex from the Thames Estuary, often occurring in new localities in considerable numbers. The foodplants of this species were reviewed by West (1980). *Lithophane leautieri* Boisd. continues to occur in new localities throughout Southeast England, and northwards to Warwickshire where a second specimen was noted in 1981. The early larvae of this species are reputed to require the flowers of *Cupressus macrocarpa*, and the spread of the moth has been linked with the progressive maturation of planted *macrocarpa* specimens. Associated with the same foodplant is *Eupithecia phoeniceata* Rambur whose easterly spread along the south coast is well documented. The moth is now reported well established in Eastbourne, Sussex. There are scattered records for Kent (although none for 1981), and a single specimen recorded from Tilbury, Essex, in August 1981.

Rhyacia simulans Hufn. continues the southerly extension of its range into Kent, being recorded from many localities in Northern Kent, with a single specimen from Dungeness. *Aporophyla nigra* Haw. is also advancing into Kent from Surrey, although at a more leisurely pace, occurring in good numbers in a few localities. Other notable captures during 1981 include a gravid female *Catocala fraxini* L. in Hampshire, *Schrankia costaestrigalis* Steph. from Dartford, Kent (the first record here for around 70 years) and *Hypena crassalis* Fab. from the same locality, far away from its normal bilberry habitats. An article by Brian West on the foodplants of *Camptogramma bilineata* L. provoked a brief correspondence, and as a result five new natural foodplants for this common species were reported. One wonders how much useful, unpublished information on larval foodplants still languishes in the diaries of entomologists. *Nola confusalis* larvae were also noted feeding on lime-blossom in Norfolk. *Hemaris fuciformis* L. was noted in many of its known localities in Southern England, but no reports of *H. tityus* L. reached the reviewer's ears. Surprisingly for such a poor year a number of species were recorded on rather perverse dates ranging from a *Phlogophora meticulosa* L. on 17th January to *Miltochrista miniata* Forst. on 16th September.

Three species were added to the British list in 1981: two of these being accidental imports — *Antichloris eriphia* Fab. (Ctenuchi-

dae) bred from banana and *Palpifer sexnotatus* Moore (Hepialidae) bred from tubers of arum lily. However the most outstanding discovery of the year was the feathered beauty, *Peribatodes secundaria* D. & S. in a Kentish woodland popularly known as "Ham Street". The moth was noted in considerable numbers and one wonders how such a large moth resident in such a well-worked locality escaped attention. All credit to Bernard Skinner whose illustrated paper on this species (Skinner, 1981) separates *secundaria* from its congener *P. rhomboidaria* D. & S.

It is hoped that future years will produce a more balanced coverage of the country, and correspondants are invited to send details of interesting 1982 observations as soon as convenient. My thanks to those entomologists who provided comments on 1981, in particular, N. Birkett, R. G. Chatelain, F. H. Clouter, N. F. Heal, S. M. Jackson, M. Parsons.

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THE STRIPED HAWKMOTH IN DEVON IN 1980. — A single specimen of *Hyles lineata livornica* Esper was taken by a Robinson M V light trap (125 watt) operated by Mrs. L. J. Craik at "Aberlemno", Down Road, Tavistock, Devon on 4 June 1980. It was photographed and released. The record should be added to the comprehensive records (two other specimens in Britain in 1980) given by Bretherton & Chalmers-Hunt in *Ent. Rec.* 93 47-54. — Dr. J. C. A. CRAIK, Dunstaffnage Marine Research Laboratory, P.O.Box 3, Oban, Argyll, PA34 4AD.

SOME NOTES ON BREEDING
CONISTRA STAUDINGERI DE GRASLIN
(LEP.: NOCTUIDAE) FROM THE E. PYRENEES

By B. GOATER*

The hamlet of St. Marsâl lies in the foothills of the Pyrénées Orientales a few km. to the north of Amélie-les-Bains Palada. On the night of 15-16 April 1981 I obtained at m.v. light there a female *Conistra* which I identified as *C. rubiginea* Denis & Schiffermüller. Knowing that this species is given to considerable variation in the south of France, I kept the moth in a plastic box provided with scored twigs of apple (*Malus*), and fed her nightly with sugaring mixture. On 28 April, it was observed that a number of eggs had been laid during the previous night on the twigs; more were deposited during the next few nights, and the young larvae started to hatch on 10 May. By 14 May, 50 had been found and transferred to another box where they were provided with apple leaves. They took to these readily, preferring the withering leaves that were starting to rot, and growing into what seemed to me to be typical, hairy, sluggish larvae of *C. rubiginea*, a species I had bred before from Surrey. Unfortunately, therefore, I neglected to observe closely and to take detailed notes of the structure and progress of the larvae, except to record from time to time that they were continuing to thrive. On 23 June, the first of them began to spin cocoons in vegetable debris on the surface of soil with which they had been provided, and even the stragglers had done so by the end of the month. The larvae remained unchanged in their cocoons until mid-August at least. Four moths emerged on 25 September, and a few (never more than five) almost daily until 21 October, the last during the fourth week of the month when I was away.

The moths that emerged, 51 in all, were extremely variable, and it soon became apparent that they were not *C. rubiginea* but *C. staudingeri* de Graslin, a species known from Portugal, Spain, E. Pyrenees, S. E. France and Switzerland. *C. staudingeri* is a smaller species than *C. rubiginea*, the wingspan in my series ranging from 30-32mm. compared to 34-36mm. in *C. rubiginea*. It is thus about the same size as *C. ligula* Esper, and indeed some specimens could easily be mistaken for it, though the forewing is slightly narrower, the costa straighter and the anterior half of the termen very straight, whereas in *C. ligula* it is very slightly concave and in *C. rubiginea* it is convex. The underside of the forewing possesses features which are helpful in distinguishing the three species:

In *C. rubiginea*, the ground colour is pale straw; the discal area is suffused with fuscous except along the veins and contains a large, blackish discal spot measuring c.1 x 2mm; the fringe is strongly chequered and there is a row of small dark terminal dots opposite the dark components of the fringe; the postmedian line is represented by a series of elongate fuscous spots.

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The hindwing, too, is pale straw coloured, with a fine, wavy postmedian line which is most conspicuous anteriorly, a series of large, fuscous, subterminal spots and a large, broadly crescentic discal spot.

In *C. staudingeri*, the ground colour is greyish buff and is devoid of contrasting markings; there is a delicate fuscous discal suffusion which fades abruptly at the almost invisible postmedian line and anteriorly about 2mm. before it, so there is a highly characteristic square-shaped pale area here, continuous with the pale terminal region, which just includes the very small, narrow discal spot; the whole wing is highly glossy.

The hindwing is finely freckled and is marked by a weakly undulate postmedian line, a few indistinct markings in the subterminal region and a large, crescent-shaped discal spot.

In *C. ligula*, the ground colour is reddish tinted, the whole of the basal region of the forewing to the postmedian line evenly suffused fuscous, and the outer part of the wing suddenly paler at the evenly curved postmedian line which runs from costa to dorsum.

The hindwing is heavily freckled reddish fuscous, the dark, narrow postmedian line moderately distinct, but the discal spot small and weakly developed.

My bred series of *C. staudingeri* may be classified as follows:

i) forewing deep fuscous brown, markings indistinct; costa sometimes with two small pale patches and up to six blackish dots, median line sometimes just visible as a strongly elbowed darker line, and dark patch in dorsal region of reniform stigma also sometimes just visible — ab. *obscurior* Oberthür (23 specimens)

ii) forewing very deep glossy reddish brown, without markings except for indications of pale and dark spots on costa (1 specimen)

(iii) forewing light reddish chestnut with fine, broken crosslines and speckles moderately distinct, with dark dorsal dot in reniform stigma and indication of elbowed median line — ab. *vaccinioides* Oberthür (10 specimens)

iv) forewing coloured and marked much as in *C. rubiginea*, the ground colour rather darker, in one specimen heavily suffused reddish fuscous in median area — ab. *multiscripta* Warren (3 specimens)

v) greyish fuscous, with yellowish tint, markings distinct, including small round orbicular stigma and reniform stigma, which contains a blackish dorsal spot — ab. *scortina* Staudinger (1 specimen)

vi) deep blue-grey, the area between antemedian and postmedian lines intensely suffused black; thorax deep reddish black (1 specimen)

vii) forewing dove-grey, markings reddish, moderately distinct; fringe reddish; thorax reddish — ab. *eos* Oberthür (7 specimens)

viii) forewing darker grey, markings fuscous, with little tint of red; fringe dark fuscous; thorax dark fuscous — ab. *livina* Staudinger (4 specimens)

ix) an individual resembling ab. *vaccinioides*, but with forewings reduced to one third the normal area (1 specimen).

The pupa (described from exuvia) of *C. staudingeri* is c. 14mm.

long, short and broad, rounded anteriorly and tapered posteriorly, the integument reddish chestnut, thin and highly glossy, with very fine puncta on abdominal segments and striae on wing cases; spiracles small, slightly raised; cremaster with two fine, closely set spines, the tips of which curl outwards. It is enclosed in a firm, oval cocoon of silk interwoven with fragments of soil and vegetable debris.

This work was carried out under MAFF licence No. PHF 30/37 issued under the Import and Export (Plant Health) (Great Britain) Order 1980 and the Plant Pests (Great Britain) Order 1980.

THE LARVA OF PERIBATODES SECUNDARIA D. & S. — A morning's hard beating in Orlestone Forest, Kent on 1st May 1982 produced one small larva of this moth from Norway Spruce. I believe this to be the first record of the larva in the wild in this country. — R. G. CHATELAIN, 65 East Drive, Orpington, Kent.

PHYLLONORYCTER DUBITELLA (H.-S.) AND COLEOPHORA LIMOSIPENNELLA (DUP.) IN SOUTH YORKSHIRE. — During a visit to Denaby Ings, near Mexborough on 17th July 1981 I collected a few *Phyllonorycter* mines from *Salix caprea* and from these three moths emerged in late July and August. As they appeared to be *P. dubitella* I made a search for further mines in October and November. They were not common for I found only about a dozen and from these seven moths were reared in March and April 1982. These latter moths had all the strigulae a golden colour without any trace of white, strongly edged inwardly with black and in this respect did not agree with the description in Bradley, Jacobs & Tremewan (*Ent. Gaz.* 20: 18) who state 'pattern pure white'. However Ffennell (*Ent. Gaz.* 21: 252) commented that his moths showed considerable variation in the amount of white, in some specimens this being much reduced both in area and brightness. I sent specimens to the Rev. D J. L. Agassiz and I am grateful to him and to Dr. I. Watkinson for confirming their identity. According to Agassiz (*Proc. Brit. Ent. Nat. Hist. Soc.* 13: 81) *dubitella* has previously been recorded only as far north as Worcestershire and Huntingdonshire.

In late June 1981 I found two cases of *C. limosipennella* on elm at Sprotbrough, near Doncaster and on 1st June 1982 I found twelve cases at the same locality on a roadside sapling elm. On an adjacent leaf to one of these cases was the excision made at the base of the leaf by the larva for its final case with the vacated overwintering case attached to the edge of the cut-out on the underside. Although there is evidence of larval feeding on this leaf it is not possible to determine whether this occurred before or after the excision of the final case. In his notes on the pre-hibernation history of this species Emmet (*Ent. Rec.* 92: 133-4) drew attention to the gap in our knowledge of the larval habits in spring prior to the final cases appearing in midsummer. Uffen in Emmet (1979:81) gives the distribution as 'south-east England' and this record appears to be the most northerly to date. — H. E. BEAUMONT, 7 Brampton Road, West Melton, Rotherham, South Yorks., S63 6AN.

FURTHER NOTABLE DIPTERA
FROM WINDSOR FOREST

By A. A. ALLEN, B.Sc., A.R.C.S.*

The present contribution is a longer sequel to my short paper (Allen, 1965, with an addendum in 1968) recording some Syrphidae and other flies from this classic locality — in which I expressed the intention of adding to it in future years. Little was known of its Diptera at that time beyond a few remarkable discoveries made by the late H. Donisthorpe while investigating its Coleoptera, together with sporadic records by others. Since then, however — though no doubt much still remains to be done, even in the better-worked groups — great advances have been made. Mr. P. J. Chandler in particular has worked the Forest in recent years and published his captures in two papers listing the flies of certain families found in the Middle Thames area, bringing together also most of the previous records or captures of note from Windsor Forest (Chandler, 1971-2). (The second of these is devoted entirely to the Empididae.)

At about the same time, my late friend G. Shephard and I were enabled to make a series of collecting-trips to the Forest, with the kind assistance and support of the Nature Conservancy who desired information on the state of its insect fauna. Coleoptera being our primary object much of the time, Diptera had often to take second place; and, while I regard the results in that Order as quite satisfactory, it is likely that many further interesting species might have been found had we been able to give more time to it. The Nematocera (other than Bibionidae) and the more obscure and difficult Acalypterate families were not, or hardly, collected; and Mr. Shephard concerned himself only with the more conspicuous forms. Our visits extended over the better parts of the summers of 1971-3, but had perforce to be rather erratic and at times few and far between. We were fortunate, however, in meeting with most of the dipterous specialities of the area known from an earlier period; in the Syrphidae (the most prominent family) the principal exceptions are *Psilota anthracina* Mg. and a few species recorded by me in 1965 but not found by us in the 1970s.

I have not thought it necessary to list here species already dealt with in 1965, unless there is something noteworthy to add. Naturally, many of our captures were of such species. Those included are marked by brackets round the entry heading, indicating that, unlike the remainder, they are not additional to those already published by me. This being only a selection, and for reasons of space, I in general omit all that appear not to be either uncommon or very local — whether or not there happens to be a previous record for the area. I have tried to avoid merely repeating or 're-hashing' many of Mr. Chandler's records, which the present notes are designed as far as possible to complement. All our captures at Virginia Water (in the southern end of the Great Park) were on

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the Berkshire side. With one or two exceptions, nomenclature follows the 1976 Check List.

The following abbreviations are used: — H. Hill = the forest north of the Winkfield Road at or near Highstanding Hill; the Park = Windsor Great Park; G. S. = the late Mr. G. Shephard.

BIBIONIDAE

Several species of *Bibio* were met with, but there is a great dearth of up-to-date information on the British species and their distribution. *B. leucopterus* Mg., with its very dark-looking females, is not uncommon at H. Hill in late spring; the large and distinctive *B. pomonae* F., very local in the south-east, occurs sparingly about Badger's Bridge further north in the Forest in July; *B. varipes* Mg. and *B. lepidus* Lw. may also be worth a mention, the latter autumnal species from ivy in the Park (♂, 30.ix.64). The common and familiar *B. marci* L. (St. Mark's Fly) was bred freely from pupae found in a very rotten stump (Allen, 1974), apparently an unusual circumstance.

STRATIOMYIDAE

Oxycera pulchella Mg. — This very striking fly turned up twice, singly: by a small pool lacking vegetation, in the Park, 15.vii.72; and by the lake at Virginia Water, 16.viii.72. Like most of its congeners it is of very local occurrence.

RHAGIONIDAE

Chrysopilus laetus Zett. — Another handsome fly (little known abroad) of which the few British specimens had all been bred: the first from a puparium found in mud round a pond in the Park, 18.vi.36, by Donisthorpe (Oldroyd, 1939); in 1968 several were reared from larvae in rotten wood in the Forest by A. E. Stubbs and P. J. Chandler (Oldroyd, 1969:46 & Chandler, 1971:20). On 30th July, 1972, I caught one settled on a log in the Park, which seems to be the first British example taken at large. All so far have been females. The original specimen was recorded as the closely-allied *C. nubecula* Fall., an error corrected soon after (Collin, 1939). It should be noticed that the leading key-character used by Oldroyd (1969) is inconstant, it having since been found that the dark wing-clouds are not always developed; the orange body of *laetus*, however, is diagnostic among our few species.

TABANIDAE

Hybomitra bimaculata Mcq. (f. *bisignata* Jaen.). — A woodland horsefly; females not very scarce in the Forest about July. I first took one in 1940, and we found it (or rather, it found us!) sparingly in 1971-2. One was swept from rhododendron flowers, unusually for a Tabanid.

Tabanus bromius L. — Females occur both in the Forest (together with the last) and also quite widely in the Park, in July and August (first in 1940) in more open situations, probably feeding on the cattle which roam there freely; often sitting on palings, etc., at the edges of plantations, like the Asilid *Machimus atricapillus* Fall. The record of *T. miki* Brauer from the Park (Chandler, 1971) was incorrect, the specimen having since been found to be *bromius* (teste P.J.C.).

ASILIDAE

Dioctria linearis F. — A well-marked local species not uncommon over a wide extent of the northern part of the Forest in June and July, but we never found it elsewhere in the area.

Neoitamus cyanurus Lw. — H. Hill, apparently not rare. This robber-fly is a typical sylvan insect. One female had caught a *Bibio pomonae*, about as big as itself.

THEREVIDAE

(*Psilocephala melaleuca* Lw.). — A speciality of the area, seldom seen as an adult and still more seldom caught; see Allen, 1965; Chandler, 1971; but finds of the larva (seemingly hard to rear) indicate a wide distribution over the Park and Forest. On 4.vii.71, at H. Hill, I watched a ♀ *Psilocephala* zigzagging rapidly from side to side in front of an old dry red-rotten trunk of oak where a portion of the interior was exposed, a few inches above ground; but something alarmed it before the net could be brought into play, and it was not seen again. A week later, in very hot dry weather, many flies and other insects were congregating about a stretch of the margin of Badger's Brook in the Forest, among which were a few of the present species — the one or two males seen being easily picked out by their silver colour flashing in the sun as they flew. Capture was quite another matter, for not only was any fly that settled to drink quickly disturbed, but the stream-banks were thick with ferociously thorny brambles, making the use of a net most exasperating. However, G. S. with great dexterity succeeded in catching a ♀ in perfect condition, which he generously insisted on my taking. In July 1972 he bred a ♀ *melaleuca* from a full-fed larva obtained earlier that year in the Park, from mould and frass under loose oak bark where there were many larvae of the chafer *Gnorimus variabilis* L. Much more recently (late May 1981) I bred another ♀ from a larva found in red-rotten oak the previous autumn.

EMPIDIDAE

(*Drapetis ephippiata* Fall.). — Only seen previously in a small area of the Park between the Long Walk and Union Gate (Allen, 1968); not listed as from Windsor by Chandler. In July 1972 it was found to occur more widely, but still very locally, among

grass under some large elms perhaps $\frac{1}{4}$ mile from the first place. A very distinctive little fly, which I met with in two places in the Foulden district, Norfolk, in June 1979.

Platypalpus ciliaris Fall. — A frequent woodland species occurring in both the Forest and Park, included here because I bred a few examples from damp mould and debris taken from inside a cut elm stump, emerging in June; I have seen no previous breeding record.

Bicellaria intermedia Lundb. — One swept under oaks in the Park, l.vi.63. It cannot be common, as Collin (1961:257) records it from only five English counties (one of them Berks.). The usual Forest species is *B. nigra* Mg.; the very common *B. vana* Coll. I have not seen there.

Rhamphomyia sulcatella Coll. — A little-known species recorded by Chandler (1966, 1972) as quite general in the H. Hill area of the Forest in early May. Our visits were mostly too late for it, but I have a female taken there on 26.v.73.

Hilara obscura Mg. — A ♀ swept by the lake at Virginia Water, 5.viii.72. Hants. and Surrey are the only southern counties from which Collin records it.

(To be continued)

THE APPEARANCE OF A THIRD BROOD IN THE GREEN-VEINED WHITE : *PIERIS NAPI* (L.), AT MORTON LOCHS, FIFE, SCOTLAND IN 1981. — Since 1979 weekly butterfly transects have been made at Morton Lochs, Fife between April and September each year. The transects are made as part of the national monitoring scheme run from Monks Wood. In each of the three years Green-veined White have been shown to have two broods with the second ending in early September. In 1981, however, I was surprised to find fresh individuals on the wing on 13th September. The last individuals of the second brood which were very tattered had been seen the previous week. Fresh butterflies were seen over three weeks until the end of September when the recording scheme ends. Although there was little suitable flying weather I saw Green-veined Whites into the second week of October. No third broods were reported to Monks Wood from other Scottish recorders. Thomson (1980, *The Butterflies of Scotland*) has suggested that late specimens of this species might be from third broods, but there appears to be no other documented case from Scotland. P. K. KINNEAR, 11 Hillview Road, Balmullo, Fife KY16 ODE.

WHAT DOES ODONTOSIA CARMELITA ESPER EAT? — Does anybody know an alternative foodplant for *O. carmelita*? On 10/11 April, at Kirklington in Cumbria, a specimen came to a moth-trap, and I know of no birch within $\frac{3}{4}$ miles. No book I have suggests an alternative foodplant. As a matter of interest it was a night with a sharp frost, and the trap attracted no less than 99 moths. An *Orthosia stabilis* D. & S. that must have been an early arrival and had settled on the grass was actually white with hoar frost. — R. LOVELL-PANK, 33 The Highlands, Hatfield Road, Potters Bar, Herts EN6 1HU. 7.vi.1982.

Letter to the Editor

WHAT IS A TRULY BRITISH MOTH?

Dear Sir,

When I saw the heading "What is a British Moth" in the October 1980 *Record* I read the article enthusiastically, expecting something quite different! While I must agree entirely with Mr. Allen that something exotic that arrives in a box of fruit from some far-away place is of little relevance to the study of the British lepidoptera, I was disappointed not to find something more fundamental, namely "What is the current list of Breeding British Moths" (Not, please note "what was. . ."). I am convinced that there is a real need for such a list. The botanists and ornithologists seem to have a better idea than we lepidopterists of just what species do occur in Britain, either growing wild or breeding as the case may be.

I have found that a frequent question among active lepidopterists is "How many species (of macro) have you still to find?" The question is almost unanswerable at the present time. One distinguished collector said to me "only eight, that's why I concentrate on micros now." When I asked him when and where he last took a certain species (whose capture has since been reported in *The Record*) he replied that he didn't count that one as he considered that it no longer occurred! Another collector and I each had our 'target figures' but they were not by any means the same. There are many species not recorded in the literature in the last ten years, they may be known to some who guard their secret closely but in most cases I doubt it. In question time after I have given a talk on an entomological subject to an audience of general naturalists, I always have a feeling of inadequacy when asked how many species actually occur in Britain and I have to admit that we don't know exactly; surely with so many people collecting and studying moths over the last 100 years we should!

In compiling a county list I am very much aware that we are interested in what occurs now and we aim to record the date of the last capture in the county of anything which we seem to have lost. It is after all only possible to take steps to conserve species that do still occur and I like to look at a local list as a guide to conservation. Surely this principle applies on the National scale.

Given access to existing literature and the Monkswood records it should not be too difficult to agree such a list for the country as a whole. Perhaps *The Record* would be able to find space to publish a "discussion draft" in serial form, the list after all must represent our combined knowledge and not just the prognostication of one or two people. Apart from getting the record straight, it should encourage lepidopterists to search for something we all want to hear about rather than going to the same old place to catch the same old thing. — C. I. RUTHERFORD, Longridge, Macclesfield Road, Alderley Edge, Cheshire SK9 7BL, 10.viii.82.

Current Literature

Natural History Manuscript Resources in the British Isles compiled by G. D. R. Bridson, V. C. Phillips and A. P. Harvey. Pp. xxxvi + 473. 4to. Mansell, London; R. R. Bowker, New York. 1980. £97.

This is a first attempt at a survey of the natural history manuscript sources of the British Isles, and is intended to cover all natural history manuscripts in British repositories. It is not just concerned with British natural history, but also includes foreign manuscript material relating to overseas natural history, that may be found in British collections. We are told that the coverage of the survey includes as wide a definition of natural history and of the term manuscript as possible, and that 'repository' includes such varied places as 'government departments, public corporations, national libraries and museums, local record offices, local libraries and museums, universities, colleges and schools, national and local learned societies, professional institutions and, as far as possible, natural history departments within any organization'. On the other hand, the compilers have made no attempt to include items from privately owned natural history manuscript collections, since the Society for the Bibliography of Natural History has already been sponsoring a scheme to establish a register of these. Broadly speaking, the starting date for material given in the survey is about 1600, although a few 16th century items of special interest are included.

The preliminary pages consist of a foreword by D. E. Allen, who aptly remarks that 'manuscripts are the historians' bread', and that to 'know what manuscripts exist and where they are is crucial to him'. There is a detailed explanatory introduction (pp. ix-xiii), an annotated bibliography of 96 items conveniently arranged in a series of subject categories, a select list of abbreviations and a list of the 443 repositories. The main body of the work or 'The Guide' (pp. 1-376) then follows. Here the repositories are arranged alphabetically under place-name i.e. town or city, and within this geographical sequence by the name of the institution with its address along with other relevant particulars. The repositories are numbered in sequence, and included under each is a listing of the papers of individual natural historians arranged alphabetically and numerically. A name index (pp. 379-450), place index (pp. 451-458), subject guide and subject index (pp. 459-473) complete the work.

Although the survey treats of such a wide range of disciplines, there is much to interest the entomologist (including many entomological surprises) among the some 500 relevant entries classified as hereunder, each of which may involve more than one or even a whole series of separate manuscripts on that particular Order or group. Insecta: general (229), Anoplura (1), Coleoptera (46), Diptera (15), Ephemoptera (1), Hemiptera/Heteroptera (12), Hymenoptera (10), Isoptera (4), Lepidoptera (94), Mallophaga (2), Neuroptera (1), Orthoptera (1), Psocoptera (1), Siphonaptera (3),

Trichoptera (1), Insecta: collections (43) and Insecta: drawings (70). There are also 30 numbered entries referring to the Arachnida.

The compilers appear to have covered the ground pretty thoroughly, but a surprising omission is the failure to mention the British Entomological and Natural History Society, whose library holds important manuscript material, including *The Mollusca of Kent, Surrey and Middlesex* (1884) by T. D. A. Cockerell (1862-1948), and among manuscripts of entomological interest, the *Notebooks* of F. J. Coulson (1878-1965), the *Diaries* of R. A. Jackson (1890-1969) and *Notes on the Lepidoptera for 1917-25* by J. J. Lister (1857-1927). Incidentally, we should point out that the Cambridge entry on p.52 under item 80.24 'HAWKSHAW, ?John. Papers relating to his collection of Lepidoptera.', probably refers to John Charles Hawkshaw (1841-1921), whose collection of Palaearctic Lepidoptera (especially micros) is on record as having gone to the Zoological Museum, Cambridge.

The volume itself is very well got-up, being finely printed on good paper and strongly bound in buckram with gilt lettering. Presentation of the contents is admirably succinct and clear, and arranged in such a way that for ease of reference the book is a joy to use.

This is a most valuable and welcome work with abundant evidence of having been produced with great care and in the correct manner, for which the compilers, the publishers and all others involved deserve high praise. — J. M. C.-H.

Butterflies of the Rocky Mountain States by Clifford D. Ferris and F. Martin Brown. University of Oklahoma Press, Norman, Oklahoma, 1981 Hard bound \$35. Soft bound \$15.95.

This comprehensive work written by eight contributors and edited by two well known American lepidopterists is a model of its kind.

The book is divided into three parts. The first is mainly introductory and deals with various aspects of butterfly biology, with discussions on taxonomy, collecting methods and an interesting account of the early history of butterfly collecting in the Rockies. There is also an excellent illustrated survey of the various types of habitat encountered in this region.

The second part is devoted to descriptions of all the butterfly species occurring in the Rocky Mountain States (over 300 species). For each species diagnostic features are listed followed by detailed accounts of range, habitat, life-history and significant sub species. Classification of each genus is discussed, and it is, as far as I am aware, the first time that an American butterfly book has brought the generic names into line with nomenclature current elsewhere. This applies particularly to some of the blues and to the genus *Clossiana* — previously lumped with *Boloria* in American literature. The book is adequately illustrated with black and white photographs of set specimens of each species. There are also four colour

plates of selected species; unfortunately these are less well produced and there is no indication of the scale of the specimens illustrated.

Part three comprises a glossary, bibliography, a guide to genitalic dissection, a set of distribution maps and locality data, and finally, a very complete index. The book should appeal, not only to those specifically interested in American lepidoptera, but also to European butterfly enthusiasts who will recognise several familiar species in forms virtually identical to those found in the Western Palaearctic region. Examples of these are *Parnassius phoebus* F., *Colias palaeno* L., *Clossiana titania* Esp. and *Carterocephalus palaemon* Pall. For anyone actually contemplating a trip to the Rockies, the book should both stimulate interest and also provide an essential identification guide. — C. J. LUCKENS.

Notes and Observations

LARVAE OF THE BUFF-TIP: PHALERA BUCEPHALA L. FEEDING ON SORBUS SPECIES [ROSACEAE] AND ASPEN. — On September 20th, 1979, near the centre of Maidstone I noticed that most of about a dozen trees of *Sorbus aria*, cultivar *lutescens*, had small branches defoliated by *bucephala* larvae, although probably few pupated as the bole of each tree was surrounded by asphalt and a very limited amount of compacted soil. On August 5th, 1976, near Ballintra in Co. Donegal, a colony of these larvae was found upon rowan (*Sorbus aucuparia*). *Bucephala* larvae seem not to have been recorded on *Sorbus* species previously, and there are very few instances for the Rosaceae in general — Wilson, *Larvae of the British Lepidoptera and their Food Plants* (1880), mentions rose, and in *The Lepidoptera of Kent* by J. M. Chalmers-Hunt are records for apple at Petts Wood and cherry at Sittingbourne.

Noted foodplants such as laurel, *Tropaelium majus*, rose, maple, sycamore, hornbeam, horse chestnut, evergreen oak and alder are, I believe, distinctly unusual, and beech perhaps somewhat less so. On September 15th, 1963, a colony of these larvae was found on aspen at Dungeness, and another at Dartford on September 10th, 1966 was also on aspen. I can find no previous record of this species on aspen.

E. Newman in his *Natural History of the British Moths* (1869), gives only elm, lime, hazel and other trees, stating that the species is a very general feeder. R. South in *Moths of the British Isles* (1939 ed.) stated that almost any kind of tree or bush appears to be suitable food, although the foliage of elm, lime and hazel is often selected (copied from Newman?). In *The Moths and Butterflies of Great Britain and Ireland* Vol. 9 (1979), ed. J. Heath, the food-plant is stated to be deciduous trees such as oak, willow, elm, hazel and lime.

This moth has a wide distribution in the British Isles, and my observations indicate that it has distinct preferences, plus an adaptability to turn to alternative foodplants when the more favoured ones are scarce or absent. Thus in the urban parts of N.W. Kent there has been a very marked preference for lime and black

poplar, usually pollarded trees, and to a less extent common elm. On Dartford Heath, however, small oak trees are particularly favoured, and less frequently birch is selected, although the roadside limes are also utilized. Elsewhere in the countryside of N.W. Kent, in addition to the trees mentioned, relatively more use is made of hazel, willow and aspen. At Dungeness and Romney Marsh willow and willow appear to be most commonly used. In *The Butterflies and Moths of Hampshire and the Isle of Wight* by B. Goater, young birches and willows are especially noted as the larval foodplant, and this is in accord with my observations for Dartford Heath with reference to both the oak and birch.

It would be interesting to know if there are localities where *bucephala* shows a distinct preference for trees of a different kind from those mentioned above. — B. K. WEST, 36 Brair Road, Bexley, Kent.

PIERIS CHEIRANTHI HBN. IN TENERIFE. — I was interested to read the comments of Messrs. Allcard and Valletta on the occurrence of *Pieris cheiranthi* in the Western Canary Islands last autumn (see *Ent. Rec.*, 94: 112 *et seq.*).

My wife and I and our family spent some weeks in Tenerife in January and February this year. We were actually staying in the south of the island where butterflies are few, but on an excursion by hired car to the north, I saw this butterfly in Puerto de la Cruz and elsewhere in that vicinity, and found a batch of eggs on *Nasturtium* (*Tropaeolum majus*) outside Los Realejos. I saw no larvae or pupae, and I wonder if in spite of the more or less permanent summer climate this species has fixed periods when it flies.

Coincidentally, when I was there I found myself wondering about this species' foodplants. Clearly, *Nasturtium* is what is favoured now, although edible Brassicas are widely grown and presumably also used, but I have noticed that in this part of Scotland, *P. brassicae* is found much more frequently on *Nasturtium* now, whereas formerly it was to be found on Cabbages etc. Could this be natural selection? After all it is much less likely to be persecuted on *Nasturtium* than on plants cultivated for eating.

However, reverting to *P. cheiranthi*, the point is that presumably the cultivated Brassicas arrived with the first humans, and *Nasturtium*, being of South American origin must have come much later. Therefore, unless this species has evolved since the first human settlement, which seems impossible, there must be a native Brassica. Has this ever been investigated? — R. I. V. ELLIOTT, Burnbank, Saline, Fife, 25.vi.1982.

ON THE HOSTPLANT OF CHRYSOLINA POLITA (LINNAEUS) (COL.: CHRYSOMELIDAE). — I read with interest the note by Mr. J. Robbins in *Entomologist's Record J. Var.*, (1981), 93(2):27 concerning the foodplant of *Chrysolina polita* (Linnaeus). In my rather short experience of this species in West Cumbria I have also found the beetle (adults only) in association with *Lycopus europaeus* L. (Gipsywort). Several specimens were swept from some large stands of this plant growing in a damp and shady situation near to common willow trees, *Salix cinerea* L. on the edge of an old decaying willow carr

at High Sellafield, NY02/04, on June 24th 1981. Some adults were seen feeding on the leaves of this plant nearby and a few others appeared to be resting on the upper surface of individual leaves. I have collected other specimens of *C. polita* in Cumbria usually just by indiscriminate sweeping from general herbage and my localities are, River Ehen, NY00/05, 4.vi.1977, River Bleng, Gosforth, NY09/03, 2.vi.1979, Colmire Sough near Wigton, NY22/50, 10.vi.1978, River Eamont, Penrith, NY56/30, 28.vii.1979 and Barfield Tarn, Bootle, SD11/86, 9.vi.1981.

P. Jolivet and E. Petitpierre (1976, *Ann. Soc. ent. Fr.*, 12 (1): 123-149) in their very extensive work on the trophic selection patterns and host plants of the genus *Chrysolina* records *Lycopus* as a food-plant of *C. polita* along with certain other Labiatae species, including *Mentha*. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF.

THE HUMMING-BIRD HAWK MOTH IN LONDON. — Yesterday at about 8 o'clock in the evening I saw a Humming-bird Hawk Moth, *Macroglossum stellatarum* L., feeding on a buddleia in this Close less than one mile from Marble Arch. — THOMAS LUMLEY, 5 Robert Close, Little Venice, London, W.9., 27.vii.82.

AN UNUSUAL ABERRATION OF HAMEARIS LUCINA L.: DUKE OF BURGUNDY. — In May 1979, I noted an aberration of this butterfly at a Somerset habitat, and have coloured photographs of it. The specimen is characterised by having the inner row of pale spots on the upper hindwing of a pure white, the rest of insect being quite normal. One or two *Hamearis lucina* with this peculiarity have been seen there each year since, and the aberration occurs mainly in the females. — R. D. SUTTON, F.R.E.S., 19 Corner Close, Wellington, Somerset.

AUTOGRAPHIA BRACTEA D. & S.: GOLD SPANGLE IN KENT. — On the night of the 14th July 1982, I took a male of this moth at m.v. light behind the cliffs at St. Margaret's Bay, Kent. I understand that this is the first record of this species for the county. Also taken there that night was a male *Deltote bankiana* F. (Silver-barred), and on the 16th July with Mr. J. Roche, a female *Rhyacia simulans* Hufn. (Dotted Rustic). — J. PLATTS, 11, Maydowns Road, Chestfield, Kent.

LEPIDOPTERA AT PAGHAM HARBOUR, WEST SUSSEX. — On 2nd July 1982, my wife and myself were at the harbour and as I was searching a large area of red valerian for migrant butterflies, I noticed a single *Macroglossum stellatarum* L. hovering over the flower heads. I watched it for several minutes then we continued on our walk. On our return I took another look at the flowers and found two of these moths busily feeding from the flowers. The biggest surprise of the day was when my wife pointed to a single *Ladoga camilla* L. flying around a mass of honeysuckle not a hundred yards from the sea-shore. This seemed an unusual locality for a woodland butterfly. The day was hot with warm winds coming in from the sea. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex BN6 8NG.

COLOUR CHANGE IN THE GENUS ADSCITA. — During the first week in June, whilst busy recording the localities of 'Foresters' in Sussex I collected a number of specimens of *Adscita globulariae* Hbn. and *A. geryon* Hbn., both from the same site on the 5th June 1982. These were subsequently taken home to be photographed in a pseudo-natural pose on some potted *Helianthemum*. As with other active day-flying moths I chilled the adults for five minutes in the freezer prior to arranging my 'set'. However, when removed from the freezer they had changed from iridescent green to a deep maroon colour. As the moths revived and returned to normal temperature in the sun they changed back to green. I assume that the colour change brought about by a temperature drop is connected with the structural colouration of the scales. I have never heard of this happening before in any British species, or read of this phenomenon in the literature. One wonders whether evening temperatures can bring about a colour change in a state of nature, and if so whether the colour change has a selective advantage for the moths in the early morning before they become active enough to evade their avian predators. M. HADLEY, c/o Nature Conservancy Council, 19/20 Belgrave Square, London SW1X 8PY.

THE GRECIAN COPPER: HEODES OTTOMANUS LEFÈBVRE AND CLEOPATRA: GONEPTERYX CLEOPATRA L. IN YUGOSLAVIA. — On 10th April 1982 in the meadow on the island of Lokrum near Dubrovnik I saw a freshly emerged *Heodes ottomanus*. Close-up photographs were taken of uppersides and undersides of wings which confirm identification. Also on the same day at the highest point of the island I definitely saw one *Gonepteryx cleopatra* ♂, then on two later occasions during our holiday I saw further lone ♂ specimens on the nearby Babin Kuk peninsular. These observations may be of interest because the distribution maps in Higgins and Riley, *A Field Guide to the Butterflies of Britain and Europe* do not show these species as occurring in the Dubrovnik area of Yugoslavia. — J. E. GREEN, 25 Knoll Lane, Poolbrook, Malvern, Worcs, WR14 3JU. [It is a rare event to see information about butterflies from Dubrovnik on the Adriatic coast, and Mr. Green's notes are most interesting. Vagrant specimens of *Gonepteryx cleopatra* L. occur probably throughout the Mediterranean area, but breeding colonies are less common. The record of *Heodes ottomanus* Lef. near Dubrovnik, confirms that of Hans Epstein a few years ago, who reported finding an extensive colony a little south of the town. This interesting species is restricted to the eastern Mediterranean, where it seems the colonies are often widely separated. The distribution is not well understood and more information is needed, especially from western Turkey. The entire area, that I used to know as Montenegro, is relatively unexplored, with Albania and its splendid mountains so near but unapproachable at present. I should add that corrected distribution maps for *G. cleopatra* and for *H. ottomanus* were among the many additions and alterations needed for the last (1980) revised edition of the *Field Guide*. — Dr. L. G. HIGGINS.]

ORANGE-TIP ODDITIES. — Two springs ago (Vol. 93: 97-99, Pl. II) I wrote of the pupation of *Anthocharis cardamines*. For the photographs I had collected four larvae, two of which pupated before I was ready and two later; all in July 1980. All pupae were brown, but I added a fifth, a green one, found wild.

Two very soon succumbed to parasites. These emerged from the mid-dorsum of the pupa and dropped to the ground, each leaving a two-inch thread of solidified matter hanging from the exit hole, with the parasite pupa formed below. Large black Tachinid flies emerged within a month, one of which I gave to Dr. Neville Birkett, who kindly had it identified by Mr. H. H. Carter of Reading Museum. It is *Phryxe vulgaris* (Fallén), a common fly with a wide range of hosts and two generations a year.

Two brown pupae and a green one remained to overwinter 1980/1981. Spring and summer 1981 apparently passed without notice and all three overwintered again. In March 1982 they showed signs of life; a female emerged from the green pupa on 23 March and another from one of the brown ones on 12 April. Meanwhile the third coloured up as a male, but died.

Now the interesting observation of R. H. Miller in S. W. Scotland has just appeared (p. 162). It gives rise to a highly unscientific conjecture. Could something odd in early 1981 have caused (a) a widespread postponement of emergence of this species for a year, and (b) failure of the males to emerge? This could account for the preponderance of females in his area, some 80 miles north from here, in spring 1982. — Lt. Col. C. F. COWAN, 4 Thornfield Terrace, Grange-over-Sands, Cumbria. LA11 7DR.

EPERMENIA AEQUIDENTELLUS HOFMANN: DAUCELLUS PEYERIMHOFF (LEP.: EPERMENIIDAE) IN KENT. — While observing lepidoptera at light at Stodmarsh Nature Reserve on the night of the 11th August 1982, I took a smallish micro in fine condition that I did not immediately recognise. On returning home I identified it as *Epermenia aequidentellus* from two examples in my collection bred from Portland, Dorset in 1975, and kindly given me by Mr. J. Roche. The moth is known to range from Sussex to Devon, but this is the first record to my knowledge of the species' occurrence in Kent. — J. M. CHALMERS-HUNT.

EUCOSMA METZNERIANA TREITSCHKE IN HAMPSHIRE. — A rather worn female specimen of this Tortricoid moth came to my m.v. trap here on the night of the 21st June 1982. I believe this to be only the second British specimen. — Dr. J. R. LANGMAID, 38 Cumberland Court, Festing Road, Southsea, Hants PO4 0NH [The only other British *metzneriana* to our knowledge was that taken by R. J. Revell near Cambridge (cf. *Ent. Rec.*, 89: 329, fig. 1). — Editor].

EUROIS OCCULTA L.: GREAT BROCADE IN SUFFOLK. — I wish to record that at the meeting of the British Entomological and Natural History Society at Cavenham Heath on the night of 31st July 1982, I noted a male of the continental form of this moth at light. — C. PENNEY, 39 Chaucer Close, Tilbury, Essex RM18 8EG.

THE MARSH FRITILLARY: EUPHYDRYAS AURINIA ROTT. AND OTHER LOCAL BUTTERFLIES IN DURFOLD WOODS, SURREY/SUSSEX BORDER in 1982. — On May 25 I saw a freshly emerged Marsh Fritillary, a species I have never before seen in 15 years of visiting the area; also large colonies of the Wood White, *Leucophasia sinapis* L. On July 18, the Silver-washed Fritillary, *Argynnis paphia* L. was abundant and included one f. *valesina* Esp. The White Admiral, *Ladoga camilla* L. was also very plentiful and although not seen by me, a passing acquaintance told me he had seen two ab. *nigrina* Weymer the previous day. Of the Purple Emperor, *Apatura iris* L., several males were seen feeding on decaying material, water etc. and, for the first time for many years, a female was observed flying at low levels when the sun reappeared from behind the clouds. At one time the insect was observed for 1½ hours feeding on something caught in the fork of a branch of a tree — about 20 ft. up — possibly sap or dead carrion. On being disturbed it flew in a slightly uncertain fashion to the top of a young spruce tree where it stayed for a further thirty minutes with its wings open, back to the sun, before flying off. — M. S. HARVEY, Highfields House, Highfields, Ashted, Surrey.

THE LARGE TORTOISESHELL: NYMPHALIS POLYCHLOROS L. IN 1982. — On May 9, a Large Tortoiseshell was seen for about 10 minutes at Ranmore Common in a sunlit clearing, flying in and out of trees and settling about 15 ft. up on a trunk. I have observed similar behaviour in this hibernator in the Sierras of Madrid. — M. S. HARVEY, Highfields House, Highfields, Ashted, Surrey.

THE COSMOPOLITAN: MYTHIMNA LOREYI DUPONCHEL AND OTHER MIGRANTS IN CORNWALL, AUGUST 1982. — While staying the last two weeks in August on the coast at Portleven near Helston, I recorded the following species. On the morning of the 25th I found a dark specimen of *Mythimna loreyi* Dup. in the m.v. trap, and between the 20th and 25th six specimens of *M. vitellina* Hbn. Larvae of *Heliothis peltigera* D. & S. were quite numerous on the flowers of *Matricaria* on Loe Bar, and nearby I noted seven larvae of *Macroglossum stellatarum* L. and one at Sennen Cove, near Land's End. Of the commoner migrants at m.v. I recorded *Phlogophora meticulosa* L. *Agrotis ipsilon* Hufn. and a number of *Peridroma saucia* Hbn. The migrant butterflies were represented by a few *Cynthia cardui* L., whilst *Vanessa atalanta* L. was quite abundant. — N. GILL, 3 Wentworth Drive, Elmley, Huddersfield.

NOLA AERUGULA HBN.: SCARCE BLACK ARCHES AND AUTOGRAPHIA BRACTEA D. & S.: GOLD SPANGLE IN SHEPPEY. — The following interesting species appeared in 1982 at the m.v. trap in my garden here; the dates are those of the mornings following the nights when the trap was operated. 14th July, *Nola aerugula* Hbn., three; *Meganola albula* D. & S. (Kent Black Arches), three and two or three every night since; *Autographa bractea* D. & S., one; 25th July, *Eilema pygmaeola* Doubleday (Pigmy Footman), one. — F. H. CLOUTER, Helice, Glendale Road, Minster, Sheppey, Kent, 29.vii.82.

THE RE-OCCURRENCE OF *BISIGNA PROCERELLA* D. & S. (LEP.: OECOPHORIDAE) IN BRITAIN. — First taken in this country in 1976 in two wooded localities in Kent situated only a few miles distant from one another (cf. *Ent. Rec.*, 88: 211-212), we have since hoped to renew acquaintance with this beautiful moth. Such an event occurred on the 10th July 1982, when at 3.15 a.m. a fresh female *B. procerella* came to light at Orlestone Forest, Kent, and at the same spot during the early hours of the 14th July we were again favoured, this time by the appearance of both sexes at light between 1.30 and 3.00. Furthermore, at the same place, Mr. Norman Heal had the good fortune to capture at light a single *procerella* on the night of the 14th, and three more on the 18th July. The larva is said to feed on lichens and mosses growing on the trunks of trees, and as there seems a chance the species may be resident in that part of Kent, we hope to undertake a thorough search for it next spring when the larva should be full grown. — J. M. CHALMERS-HUNT.

THE CLIFDEN NONPAREIL: *CATOCALA FRAXINI* L. AND OTHER LEPIDOPTERA AT HIGHCLIFFE IN 1982. — August was a poor month for migrants with only a worn *Herse convolvuli* L. to the cliff trap on the 2nd August. In the garden trap a *Catocala promissa* D. & S. turned up on the 4th August, a long way from its normal habitat. Another unexpected species was *Agdistis bennetii* Curtis, three at the cliff and two in the garden on the 1st and 2nd of the month. The nearest salt marsh is four miles away. On the 31st, a beautiful male of *Cyclophora puppillaria* Hbn. came to the garden trap.

September started well. Two *Colias croceus* Geoff. appeared here on the 2nd, and two *Rhodometra sacraria* L., one in each trap, arrived on the 7th with a wave of *Autographa gamma* L., *Peridroma saucia* Hbn. and *Agrotis ipsilon* Hufnagel. A third *R. sacraria* came in on the 9th. On the 10th the cliff trap swarmed with migrants — 245 *A. gamma*, 22 *P. saucia* and 11 *A. ipsilon* with a solitary *Heliothis peltigera* D. & S. There was much less in the garden trap, but a fine *Catocala fraxini* L. was perched on the house wall about 12 feet up. It flew off in a lordly manner when I tried to reach it with a net. Last night conditions looked even better, but there was little in either trap. All the migrants seemed to have moved inland and there was no second wave. One interesting visitor, however, was a fresh female *Hepialus humuli* L. which must surely be a second brood insect in spite of Heath's statement (*The Moths and Butterflies of Great Britain and Ireland*, 1: 167) that it is univoltine in the U.K. — E. H. WILD, 7 Abbots Close, Highcliffe, Christchurch, Dorset BH23 5BH, 12.ix.82.

THE NI MOTH: *TRICHOPLUSIA NI* HBN. IN HAMPSHIRE. — I took a worn specimen of this species here at m.v. on the night of 14th July 1982. — Dr. J. R. LANGMAID, 38 Cumberland Court, Festing Road, Southsea, Hants PO4 ONH.

THE STRIPED HAWKMOTH: *CELERIO LIVORNICA* ESP. — Among 80 species of macrolepidoptera to visit the light in Orlestone Forest, Kent on Midsummer's Eve was a fine *Celerio livornica*. — R. G. CHATELAIN, 65 East Drive, Orpington, Kent.

RESTRICTED DISTRIBUTIONS OF BUTTERFLIES AND PLANT CHEMISTRY. — A. C. Morton's hypothesis (*Ent. Rec.*, 94 : 67-69) that the restricted distribution of the adonis blue, *Lysandra bellargus*, results from the larvae being unable to eat cyanogenic varieties of horseshoe vetch, *Hippocrepis comosa*, is both plausible and testable. In my book *What is ecology?* (Oxford University Press, 1980), I suggest essentially the same hypothesis to account for the restricted British distribution of the black hair-streak, *Strymonidia pruni*. This species occurs in certain woods between Oxford and Peterborough whereas the larval food-plant, *Prunus spinosa* (blackthorn), is found virtually everywhere in Britain. Maps comparing the distribution of the butterfly and its food-plant are given on page 10 of *What is ecology?* On page 180 I write, "Is it possible that the tissues of blackthorn leaves differ in chemical composition in different parts of its distribution and that the black hairstreak is adapted to one particular chemical variety? This is certainly a feasible explanation for the strange distribution of the butterfly. The restriction of the black hairstreak to only part of the range of the blackthorn may represent just one step in the continuous evolutionary jostling between eater and eaten. If this interpretation is correct, the outcome might be either a spread in unpalatability of the blackthorn so that black hairstreaks become extinct, or an extension of the butterfly's distribution as it adapts to eating other chemical strains of blackthorn."

Many different chemical compounds are found in plants which play no direct part in growth and development. Their function seems to be to regulate consumption by herbivores. The cardenolides present in milkweeds and the glucosinolates in brassicas are just two examples of groups of compounds which both attract and repel potential herbivores. There is evidence of much within-species variation in the presence or absence of chemical compounds which could easily account for many of the peculiarly restricted distributions of those species of butterflies whose larvae are specialists on one food-plant. My guess is that Morton's hypothesis will be found to be essentially correct, although it may explain only the restricted distribution of *L. bellargus* and not its recent decline, unless of course there has been a dramatic increase in the frequency of the (postulated) cyanogenic varieties of *H. comosa*. — DENIS F. OWEN, 66 Scraftoft Lane, Leicester LE5 1HU.

SOME UNUSUAL INDIGENOUS MACROLEPIDOPTERA AT NINFIELD EAST SUSSEX IN JULY 1982. — The numbers of species recorded each night during this part of the year seem to be up on the respective part of last year; with this increase there have occurred some more unusual species. *Chilodes maritima* Tausch. (Silky Wainscot) appeared, as a singleton, on the 5th: I have recorded this species only once before in this site, in 1980, the example being ab. *wismariensis* Schmidt; it is probable that both these examples were blown up from the nearby Pevensey Levels, where the species occurs more frequently. On the 8th, one *Bomolocha crassalis* Fab. (Beautiful Snout) was taken at light; this was rather a surprise as to my knowledge there is no Bilberry (*Vaccinium*

myrtilus L.) in the surrounding area. In Colin Pratt's book, "A History of the Butterflies and Moths of Sussex", it is noted that this species since 1976 "has become regular in appearance in several places". However, I have only seen one other specimen from this area, that being recorded some years ago from near Catsfield. *Paracolax derivalis* Hubn. (Clay Fan-foot) in its single annual occurrence on the 14th, along with this, being recorded for the first time here, was a single *Phytometra viridaria* Clerk (Small Purple Barred). Perhaps the most noteworthy catch of the night was a female *Chesias rufata* Fab. (Broom-tip); South mentions this species as occurring in Sussex. Its status in E. Sussex is now considered as "very local" and "very rare". There are quite large patches of Broom (*Sarothamnus scoparius* L.) some distance from the position of the trap, these may be worth further investigation. — M. PARSONS, The Forge, Russells Green, Ninfield, near Battle, E. Sussex.

BUCCULATRIX THORACELLA THUNB. CONFIRMED FOR VICE-COUNTY 11. — I have just taken a fresh specimen of *Bucculatrix thoracella* on the frame of my bedroom window which faces an avenue of tall limes planted some 130 years ago. Goater (*The Butterflies and Moths of Hampshire and the Isle of Wight*, 34) quotes Hervey's List for Hants but cannot confirm the record. Although in Dorset, Highcliffe is in vice-county 11, so it seemed worth confirming its presence here. — E. H. WILD, 7 Abbots Close, Highcliffe, Christchurch, Dorset BH23 5BH, 28.vii.82.

A FEEDING HABIT OF BRACHYOPA SCUTELLARIS (DESVOIDY) (DIPT., SYRPHIDAE). — *Brachyopa scutellaris* does not seem to be a common insect in the north of England. I first took a specimen, a male, when sweeping under trees here at Kendal Wood on 26 May 1979. My second acquaintance with the fly was much more interesting. On 29 May 1981 I was gardening, again at Kendal Wood, and my arms were sweating considerably and exposed when a fly landed on one of them and clearly commenced to imbibe my sweat. The action of the proboscis was clearly visible and the fact of the drinking was quite obvious. I did not immediately have a suitable receptacle for the insect but went into the house to obtain a few tubes. On returning to my gardening activities another fly of the same species landed on my arm and this time was duly caught. It proved to be a female *B. scutellaris*. The following day, 30th., I was again gardening and was visited by two or three *scutellaris* again to imbibe. At this time it was noticed that they were rather sluggish flies and on being brushed off ones arms went to the ground-sheet on which I was kneeling and showed little inclination to fly.

I do not recollect reading of this habit of imbibing sweat by a Syrphid. Most adult Syrphids feed on pollen, nectar or a mixture of the two. The late A. E. Wright of Grange-over-Sands recorded the capture of seven specimens "— taken flying round flowers of Mountain Ash" (*North Western Naturalist* 15 : 242-247). It would be interesting to learn if other entomologists have experience of similar feeding habits by Syrphids. — Dr. NEVILLE L. BIRKETT, Kendal Wood, New Hutton, Cumbria, LA8 0AQ. 28.iv.1982.

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CONTENTS

<i>Epierus comptus</i> (Erichson) (Col.: Histeridae) New to Britain. D. R. NASH ...	165
The Scarce Swallow-tail: <i>Iphiclides podalirius</i> (L.) in Britain Dr. R. S. WILKINSON ...	168
Butterflies in Eastern Switzerland 1980, with a Note on <i>Erebia pluto</i> de Prunn. Dr. C. J. LUCKENS ...	173
Some Sawflies from Whitlaw Moss Nature Reserve, Southern Scotland, with a Species New to Britain (Hym.: Symphyta). A. D. LISTON.	175
<i>Argyresthia trifasciata</i> Staudinger, 1871 (Lep.: Yponomeutidae) in Britain. Lt. Col. A. M. EMMET ...	180
Flying Crooked. Dr. J. S. Phillpotts ...	183
A Review of the Indigenous British Macrolepidoptera for 1981 P. A. SOKOLOFF ...	185
Some Notes on Breeding <i>Conistra staudingeri</i> de Graslin (Lep.: Noctuidae) from the E. Pyrenees. B. GOATER ...	188
Further Notable Diptera from Windsor Forest. A. A. ALLEN ...	191
Letter to the Editor: What is a Truly British Moth? ...	195
Notes and Observations:	
The Brimstone: <i>Gonepteryx rhamni</i> L. Apparently Imbibing at Hydrangea Flowers. B. K. WEST ...	172
Lepidoptera at Canna in 1982. Dr. J. L. CAMPBELL ...	174
<i>Agonopterix astrantiae</i> Heinemann in Hampshire. Dr. J. R. LANGMAID. ...	182
Low Numbers of Lepidoptera in 1981. Rev. J. H. VINE HALL ...	182
Two Further Records of <i>Barypeithes sulcifrons</i> (Boheman) (Col.: Curculionidae) from West Cumbria. R. W. J. READ ...	184
The Striped Hawkmoth in Devon in 1980. Dr. J. C. A. CRAIK ...	187
The Larva of <i>Peribatodes secundaria</i> D. & S. R. G. CHATELAIN ...	190
<i>Phyllonorycter dubitella</i> (H.-S.) and <i>Coleophora limosipennella</i> (Dup.) in South Yorkshire. H. E. BEAUMONT ...	190
The Appearance of a Third Brood in the Green-veined White at Morton Lochs, Fife, Scotland in 1981. P. K. KINNEAR ...	194
What does <i>Odontesia carmelita</i> Esper Eat? R. LOVELL-PANK ...	194
Larvae of the Buff-tip: <i>Phalera bucephala</i> L. Feeding on <i>Sorbus</i> Species [Rosaceae] and Aspen. B. K. WEST ...	198
<i>Pieris cheiranthi</i> Hbn. in Tenerife. R. I. V. ELLIOTT ...	199
On the Host Plant of <i>Chrysolina polita</i> (L.). R. W. J. READ ...	199
The Humming-bird Hawk Moth in London. T. LUMLEY ...	200
An Unusual Aberration of <i>Hamearis lucina</i> L. R. D. SUTTON ...	200
<i>Autographa bractea</i> D. & S.: Gold Spangle in Kent. J. PLATTS ...	200
Lepidoptera at Pagham Harbour, West Sussex. D. DEY ...	200
Colour Change in the Genus <i>Adscita</i> . M. HADLEY ...	201
The Grecian Copper: <i>Heodes ottomanus</i> Lefebvre and <i>Cleopatra</i> : <i>Gonepteryx cleopatra</i> L. in Yugoslavia. J. E. GREEN ...	201
Orange-tip Oddities. Lt. Col. C. F. COWAN ...	202
<i>Eucosma metzneriana</i> Tr. in Hampshire. Dr. J. R. LANGMAID ...	202
<i>Epermenia aequidentellus</i> Hofmann in Kent. J. M. CHALMERS-HUNT ...	202
<i>Eurois occulta</i> L.: Great Brocade in Suffolk. C. PENNEY ...	202
The Marsh Fritillary in Durlford Woods in 1982. M. S. HARVEY ...	203
The Large Tortoiseshell in 1982. M. S. HARVEY ...	203
The Cosmopolitan: <i>Mythimna loreyi</i> Dup. in 1982. N. GILL ...	203
The Scarce Black Arches and Gold Spangle in Sheppey. F. H. CLOUTER ...	203
The Re-occurrence of <i>Bisigna procerella</i> D. & S. (Lep.: Oecophoridae) in Britain. J. M. CHALMERS-HUNT ...	204
The Clifden Nonpareil and Other Lepidoptera, 1982. E. H. WILD... ..	204
The Ni Moth: <i>Trichoplusia ni</i> Hbn. in Hampshire. Dr. J. R. LANGMAID ...	204
The Striped Hawkmoth in 1982. R. G. CHATELAIN ...	204
Obituary: G. R. Sutton ...	179
Current Literature ...	196, 197

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207

SUCCESSFUL REARING OF THE DOTTED RUSTIC
SUCCESSFUL REARING OF THE DOTTED RUSTIC:
RHYACIA SIMULANS (HUFNAGEL)
(LEP.: NOCTUIDAE)

By P. CONVEY*

A specimen of *Rhyacia simulans* (Hufn.) was caught in the Winchester College Natural History Society's mercury-vapour trap run in the College grounds on 2nd September 1980. This in itself constitutes an interesting record, the species usually being extremely scarce or absent in the county of Hampshire (Goater 1974), and followed the capture of another specimen on 6th August 1980 in the same trap.

The specimen was kept overnight before its identity was confirmed by Col. D. H. Sterling, and was discovered to be female when several ova were found in the collecting box. The ova, apparently previously undescribed (Heath 1979), are creamy-white at first, flattened hemispherical in shape, finely ribbed. The colour darkens to dark grey a few days before hatching. The female, as mentioned, will lay in an empty container, but when given cut couch-grass and dandelion leaves, lays with much greater readiness, and, over a period of a fortnight, laid approximately 850 ova. These were mostly in strings of from 1 to 10 ova in relatively concealed positions, for instance alongside veins and under the folded edges of dandelion leaves, and along the midrib of couch-grass. Very few were laid on dock leaves which were also provided.

Of the 850 ova, virtually all formed up, but only a third hatched over a period from ten days to four weeks after being laid. Of note is the observation that ova from the same string, laid within seconds of each other, show this variation in hatching period. The larvae have been described elsewhere (e.g. Haggett 1968), but the rearing technique used may be of interest.

The young larvae were provided with a mixture of cut couch-grass and dandelion. Most fed immediately on dandelion, although a few seemed to take couch-grass in preference. As these matured they all transferred to dandelion. No difficulties were experienced until large losses between the third and fourth instars. The reason for this was not clear, although possible explanations could be: poor foodplant, damping or overcrowding. The two lepidopterists who received some of the ova reported the loss of their complete stock, polluted foodplant being a suggested, but not proven, cause. Larvae ready for pupation left the foodplant and wandered around their box. Some of these were placed on loose peat, where they quickly burrowed. Others, not provided with peat, made a small chamber in the layers of paper lining the box. These were carefully removed to the surface of peat when near enough pupation to have stopped crawling, and more than one third pupated successfully. Six pupae were obtained and ten larvae died just before pupation. Virtually all the larvae allowed to burrow were found to

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have dried up and died. Larval development took two to three months.

The pupa, again previously undescribed (Heath 1979), is approximately 19mm long. In colour, rich reddish brown, darkening to almost black a fortnight to a week before emergence. Glossy, at first, losing this as it darkens. Antennal and limb cases clear but not prominent. Wing cases showing venation clearly, with many minute irrorations. Cremaster inconspicuous, with two slightly divergent fine spines approximately 0.7mm long.

Although all the pupae appeared to develop normally, only one perfect adult emerged on 24th December 1980, six weeks after pupation (not a bad Christmas present!). The specimen is now in my collection. A deformed example emerged on 30th December. The pupae were kept at room temperature, and were not sprayed.

Since I cannot find any reference to the contrary, I assume this to be the first successful rearing of *R. simulans* in Britain at least, albeit with a very low success rate.

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DANAUS CHRYSIPPUS L. IN TUNISIA. — On returning recently from a holiday on the Mediterranean coast of N. E. Tunisia my friend Mr. David Tombs gave me the forewing of a butterfly and asked me to identify it. I recognised it as belonging to *Danaus chrysippus*, and on turning to the account in Higgins and Riley's *A Field Guide to the Butterflies of Britain and Europe* (London, 1980) to show him, I was surprised to see the statement: "Not reported from Algeria or Tunisia."

Mr. Tombs informed me that during his stay in Tunisia from June 6th to 10th, 1982 inclusive he saw several hundred of these butterflies sailing about and feeding at a wide variety of flowers in the region around Monastir and Sousse. They did not appear to be moving in any particular direction. Throughout this period an easterly sea breeze was blowing off the Mediterranean.

D. F. Owen, in his book *Tropical Butterflies* (Oxford, 1971), includes the whole of Tunisia and most of Algeria and Libya in his distribution map for the typical form *chrysippus*. The forewing given me by Mr. Tombs appears to belong to this form.

I would be interested to know the true distribution and status of this handsome butterfly in N. W. Africa. — J. F. BURTON, 11, Rockside Drive, Henleaze, Bristol, BS9 4NW.

MATE LOCATION STRATEGIES IN THE WALL
BROWN BUTTERFLY, *LASIOMMATA MEGERA*
(L.) (LEPIDOPTERA: SATYRIDAE):
WAIT OR SEEK?

By ROGER L. H. DENNIS*

Introduction

Male butterflies are generally described as adopting one of two alternative strategies in the process of locating mates: perching, or waiting for them, and patrolling, or actively seeking them in flight (Scott 1974, Shields 1967; Shreeves 1980).

Characteristic sites varying in surface, height and situation, are selected by perchers, where they bask in the sun, and from these they launch themselves at passing insects (cf., Baker (1972) for *I. io* (L.) and *A. urticae* (L.); Davies (1978) for *P. aegeria* (L.); Joy (1902) for *A. iris* (L.) and Peachey (1980) for several species, particularly *H. lucina* (L.)). Distinctions, in height, habitat and speed, also occur for patrolling species as evident from studies of *A. cardamines* (L.) (Wiklund and Åhrberg 1978; Courtney 1980; Dennis in press); *L. sinapis* (L.) (Wiklund 1977, Peachey 1980; Warren 1981); *M. galathea* (L.) and *B. euphrosyne* (L.) (Peachey 1980).

Baker (1972) has argued that the tendency to 'stay put' or perch is the result of some female requirement, for instance nectar sources or oviposition sites, being concentrated; moreover, perching has been likened to territoriality (cf., Davies 1978) in as much as the area is defended, resident males typically intercepting and leading intruders out of the area. Baker extends the argument by pointing out that perching necessarily evolves where the energy used in defence is less than the energy used in patrolling. It follows then that the number of butterflies perching is a measure of the magnitude and concentration of a resource(s) in a particular environment though Baker conceded that the territory: male ratio determines the tendency to share spots as opposed to keep searching, via a raising of the territoriality threshold.

For only one British species have both mate location strategies been noted, — *P. aegeria* (Davies 1978). While some males are perching in woodland clearings, others have been observed patrolling in the canopy. Investigating potential mates and attempted courtships in the canopy identifies the activity as patrolling; — they are not merely waiting their turn for clearing perches. Patrolling in *A. urticae* and *I. io* was not made explicit by Baker, but as mate location is the reason for establishing territories, searching for the latter cannot be easily separated from the former and it implies that both butterflies do engage in patrolling, even if this is enforced.

Davies also discovered behaviour to vary. On sunny days, detailed experiments show there to be a premium on perching sites. Females are more abundant in clearings, and size of sun spot and time of day determine the number of males found there. On

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overcast days, the butterfly patrols regardless of location. Virtual lack of skirmishing points to abandonment of territories, yet the butterfly still attempts to court. As for *A. urticae*, Davies has recognised the readiness of *P. aegeria* males to accept intruders but has been able to link this closely with clearing size.

The present paper explores some comparative data on the closely related Wall Brown butterfly, *L. megera*. This butterfly is a known percher, but does it also patrol? Where does it perch and why are two of a series of related questions, but the emphasis is placed on examining how flexible mate location behaviour can be?

Materials and methods

The study has been conducted mainly at Brereton Heath near Congleton, but also along the Bollin valley, in north Cheshire. Individual behaviour has been determined using a cassette recorder and by making direct observations on seriation in activities and on specific lines of movement. Behaviour and movement over a wider area and on a number of individuals in succession has been conducted using transect (Pollard 1977; 1979) and capture, mark, release, recapture (CMRR) (Ehrlich and Davidson 1960) techniques separately and together.

Behaviour has been reduced to a number of simple categories (specifically flight, feeding, resting, basking, skirmishing, courtship and inspection) to avoid making premature judgements on various activities. Numerical techniques applied to timed activities, — specifically the calculation of behavioural 'distances' (E^2 of Edwards (1971)), least space analysis (Coxon and Davies 1980) and cluster analysis (Sneath and Sokal 1973), — have been used in an attempt to distinguish perchers from patrollers.

Results

A simplified tabulation of timed behaviour (Table 1) shows that males spend much of their time basking or resting. When basking the wings are open and angled to the sun and on landing the butterfly usually orientates itself accurately and quickly. The wings are closed during rest. Different surfaces are chosen for these activities (Table 2) but preference is for bare ground along paths, though other topographically distinctive surfaces are selected even newly constructed ranch fencing. Feeding and flight occupy much the same length of time.

	SF	LF	F	BR	SK	I
Total Time (seconds)	298.5	2241.5	1984	8765	584	83.5
Number of observations	132	187	153	162	115	67
Percent of total observation time for all activities	2	16	14	63	4	1

Table 1 Timed activities for *L. megera* males on Brereton Heath during 1981. Symbols as for Figure 1. Total observation time = 3 hrs 53 minutes.

Long flights are generally less than a metre above the ground, but vary according to the surface and are much less for low ground cover. Flights are usually fast, zig-zagging, often circular and typically investigative covering a wide area. Some are brief transects or circuits; others are more directional and long distance movements representing voluntary displacement and change of location.

Surface	Year	
	1981	1982
Path; bare ground	123	45
Grass	5	3
Flowerheads	0	6
Leaves of herbs, i.e. dock and nettle	3	15
Stones, bricks	4	2
Leaves of bushes, saplings and bramble	0	5
Fence posts and bars	0	18
Paper, tin, etc.	1	1
Mossy ground	2	0

Table 2 Sample data on basking and resting (perching) sites adopted by *L. megera* males on Brereton Heath in 1981 and 1982.

Males are continually scanning on the wing, but stop to inspect a wide range of objects apart from flowers. Skirmishing and attempted courtships take place while the butterfly is in flight as well as when basking and resting. Male *L. megera* skirmish with a variety of insects (Table 3); most other male *L. megera* induce much longer interactions varying from short spiral flights lasting 2 or 3 seconds to higher and extended spirals and dives described by Baker for *A. urticae* and *I. io*. Attempted courtships with female *L. megera* are longer affairs (average 35 seconds) and involve distinctive behaviour (Dennis in prep).

Insect	Frequency	Average time (seconds)	
<i>L. megera</i> (females)	14	34.7	
<i>L. megera</i> (males)	27	9.3	* <i>O. venata</i> (Br & Gr)
<i>M. jurtina</i> (females)	5	9.0	<i>L. phlaeas</i> (L.)
Bees and wasps	7	1.9	<i>P. brassicae</i> (L.)
Dragonflies	13	2.2	<i>A. napi</i> (L.)
Other butterflies*	17	2.1	<i>A. urticae</i> (L.)
			<i>I. io</i> (L.)

Table 3 Frequency and average time of attempted courtships and skirmishing of *L. megera* males with other insects on Brereton Heath in 1981.

Seriation in behaviour (Figure 1) based on a sample of males emphasises the association of different activities and modes of behaviour. Typical is a feeding mode of regular but short sessions on flowerheads separated by 'hops' or short flights from one flower to another. More significantly the diagram underlines the role of long flights and basking. Skirmishing and courtship are associated with both and males continually investigate in flight; together, this confirms the objective of basking as 'perching' and long flights

as 'patrolling'. This average picture also demonstrates the functional interdependence of basking and long flight, a deduction which seems at odds with more casual observations of 'pure' behaviour of 'perching' and voluntary displacement respectively.

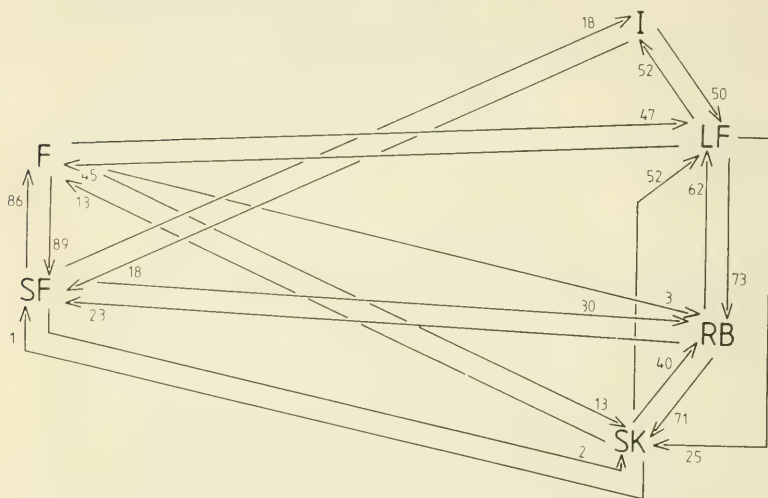


Figure 1 Seriation in male *L. megera* behaviour ($n = 30$), June and August 1981. F = feed from flower, I = inspect, SF = short flight; LF = long flight; RB = resting or basking; SK = skirmishing and attempted courtship. Short flight denotes rapid transitions of activity, whereas long flights revealed searching and investigative behaviour. Halts in flight only are counted as inspections.



Figure 2 A computer map (non-metric 2 dimensional scaling plot) of distances (Edward's E^2) between 23 male *L. megera* based on timed activity. Shading = flights; black = basking/resting; stipple = feeding; white = skirmishing, inspection and courtship. Four sizes of circle represent observation time (minutes): <300; 300 - 500; 500 - 1000; > 1000. Kruskal's stress for the computer plot is 3.9%.

Figure 2 summarises individual behaviour. Three groups of individuals are suggested by maximum linkage clustering but this is not confirmed in the non-metric scaling plot nor by single link clustering. In effect, the array describes a continuum from extremes of perching (basking and skirmishing non-feeders in the main) to patrolling (flying and skirmishing feeders). Intermediate behaviours also occur; that they are not an artefact of the observation period or switches in behaviour is confirmed by time-scaled plots.

Extremes of behaviour and intermediate forms have been monitored and mapped. Confinement of males to small areas, 'territories', is not limited to the perching mode. More varied behaviour involving longer feeding episodes and extensive patrolling circuits has similarly been identified with definite areas — a neat example was provided by a narrow fenced path, some 100 metres in extent, between a barley and ley grass field on Alderly Edge, along which three males patrolled back and forth. On these occasions skirmishing is less demonstrative, no real attempt being made to lead an 'intruder' out of the zone. Yet, extreme perching behaviour is not devoid of voluntary shifts in perching site and inspection tours. For example, of 27 'sorties' effected by one male from a small gravel heap over a 45 minute period, 11 appeared to be unrelated to intruders and involved slower, low inspection flight. At the other extreme, males 'passing through' territories have been observed to undergo long, fast but investigative flights, apparently 'domainless'.

CMRR work demonstrated that male *L. megera* have a propensity to stay in the same location, some throughout a day, others over several days (Dennis, in prep). On the other hand, territories also change hands readily but retain much the same number of individuals. In north Cheshire, males select linear habitats for perching and patrolling, such are hedgerows — despite the crop in the field — roadsides, tracks and paths, bank margins to lakes, even the new lines of ranch fencing recently constructed. The latter has provided some valuable insights into behaviour; more males roost under the horizontal bars of the fence than patrol or perch along its edges at any one time, confirming casual observations of regular spacing for mate location along uniform habitats, such as roadsides, though CMRR work failed to locate precise territorial boundaries in such habitats. Perching and patrolling zones have also been found to be oviposition sites and thus sites of female emergence (Dennis, in prep), the eggs being laid in grass curtains fronting hedges, fences and bushes and recesses along banks.

The frequency of males and females drops significantly over uniform open spaces and those seen are generally moving rapidly in straight lines; however, not all linear habitats are used. Males congregate in sheltered sunny spots, avoiding shade and areas exposed to wind.

Transect data records much the same proportion of basking and long flights from 9.00 am to roosting time (Table 4). The implication is that perching and patrolling occur throughout the day, confirming other observations. A greater inclination to perching is

	Time of day									
	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	
Percent basking	34.2	30.8	26.9	30.5	31.3	39.0	29.3	26.6	52.4	
Percent long flight	34.2	33.9	37.3	40.7	43.8	29.3	39.0	25.0	33.3	
Percent feeding	14.5	18.5	23.9	18.6	12.5	17.1	19.5	21.9	9.5	
Number of separate observations	76	65	67	59	32	41	41	64	21	

Table 4 Percentage of basking/resting, long flights and feeding for male *L. megera* during transect counts on Brereton Heath in August 1982.

suggested in the morning and evening and to patrolling around midday. Proportions of patrollers and perchers also vary from day to day subject to the weather. Precise conditions have not been monitored but remarkable uniformity occurs in the percent of perchers on overcast days (55% – 58%; $n = 4$) compared to bright, cloudless, sunny conditions (12%, 31%; $n = 2$). This is a reversal of observations made on *P. aegeria* and may reflect sensitivity to movement in a linear habitat when energy levels are high. Proportions of patrollers and perchers no doubt changes over a longer time span in response to environmental changes. A number of perching spots were lost in 1982 due mainly to the provision of parking and other recreational facilities on the heath; however, one small area succumbed to vegetation succession.

Discussion

L. megera is a percher and patroller. In the process of obtaining mates, it displays a wide range of behaviour between the extremes of territorial defence and more passive acceptance of competitors while scanning the ground in flight. There is evidence too that we should expect variation in behaviour at the population level, – in respect of habitat differences and population density – within populations, – due to seasonal circumstances including habitat changes, weather and light conditions – and perhaps even at the individual level, – linked to insect age and inherited bias. All this points to the existence of a flexible response system and much additional work needs to be done on this aspect of mate location.

By extension, we should also expect to find variation in mate location behaviour among other butterflies, and because this reflects upon their habitats and other adaptations, there is a tendency to attach simple behavioural labels to species that on detailed examination may be inappropriate. Clear examples of perching and patrolling exist but many species show a wide range of behaviour. All perchers change their location and patrollers stop to feed and it is possible that males are vigilant for mates even on these occasions, as in the case of *L. megera* (cf., Figure 1). *H. semele* (L.) and *M. galathea* among the Satyridae occur at opposite ends of the perching/patrolling spectrum respectively, but *P. tithonus* (L.), *M. jurtina* (L.) and *E. aethiops* (Esper) (Dennis 1982) engage in both activities.

(To be continued)

THE KENTISH GLORY: *ENDROMIS VERSICOLORA*
(L.) AT RANNOCH

By E. C. PELHAM-CLINTON*

A paper in this journal by Marran (1981) discussed the decline and present distribution of the Kentish Glory moth in Great Britain. The author noted the lack of recent records from Rannoch in spite of the abundance of birch in that area.

That this species at Rannoch fed on alder has not been accorded much publicity. Most British publications either give birch only as the foodplant or else a curious list of them; e.g. Morris (1872), who gives 'birch, beech, lime, hazel, &c.', and South (1907, and all later editions), with 'Alder, willow, and lime have also been mentioned as foodplants'. However Allan (1949) includes only birch and alder, stating '*Alnus glutinosa* — Alder (recorded from Scotland only)'. Perhaps continental foodplants are more varied: Rougeot & Viette (1978) list '*Betula*, *Corylus*, *Tilia*, *Alnus*, *Carpinus*, *Ulmus*, etc.'.

Evidence of the alder-feeding Rannoch race is provided by the T. E. D. Poore collection and notebooks in the Royal Scottish Museum, Edinburgh (reg. no. RSM NH 1969.81). A series of specimens bred from Rannoch larvae all had alder as the foodplant, the most recent collected as larvae in 1939. Most are from the Allt Druidhe, near the eastern end of the south shore of Loch Rannoch, an area now partly afforested. The Poore notebooks show that larvae were taken from small trees and that one tree was a source of larvae over several years.

The Rannoch moths are on average larger than those from Strathspey and the hindwings of the females have a pinkish flush scarcely to be seen in Strathspey specimens.

It would be interesting to know whether the Kentish Glory ever fed on birch at Rannoch. It seems likely that the sedentary habit pointed out by Marran (1981) would lead to specialized habits in different areas and perhaps to an exclusively alder-feeding population at Rannoch.

The south shore of Loch Rannoch no longer has many small alders, but there are other suitable areas around the loch and further down the Tummel in which the species possibly might still be found.

Acknowledgement

I am grateful to Dr. Mark Shaw of the Royal Scottish Museum for details of the specimens in the Poore collection.

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THE PIMPINEL PUG: EUPITHECIA PIMPINELLATA HBN. IN WARWICKSHIRE. — After reading the splendid article on British Pugs by Brig. E. C. L. Simson in this journal, I was inspired to search for the larvae of *Eupithecia pimpinellata* amongst the Greater Burnet Saxifrage (*Pimpinella major*), which grows in some profusion at Woodlands Quarry, Hartshill, North Warwickshire. I began searching in 1981 on the afternoon of the 15th September, the date advocated in the article, and soon found a single larva on a flower stem of the foodplant, but despite further searching over the next few days no more larvae were located. The single larva pupated on the 30th September 1981, but the adult has so far failed to emerge this summer. Identification was kindly confirmed by Steven Church and Mark Hadley of the Nature Conservancy Council, from a colour slide of the larva submitted by the writer. This is the first authenticated record of this species for Warwickshire (v.c. 38). — R. J. THOMAS, 23 Trentham Road, Hartshill, Nuneaton, Warks.

SURVIVAL OF LIMENITIS REDUCTA STAUDINGER (LEP., NYMPHALIDAE) IN YORKSHIRE. — During the summer of 1981, I was able to spend a period of time near Montpellier in the Department of Hérault, in Southern France. The Southern White Admiral, *L. reducta*, was widely distributed in the region, and some females which were captured laid ova freely in captivity. These ova subsequently hatched and the larvae began to feed on honeysuckle in a way very similar to that of the larvae of *L. camilla*. (L.), the White Admiral. On returning to Yorkshire, most larvae continued to feed, but about six remained small and were clearly going to overwinter in this stage. Because of other commitments, these small larvae could not be tended carefully over all the winter, and so were placed outside on a honeysuckle in the garden, with no protection whatsoever, in October. During the early part of June 1982 to my surprise, two pupae were found on the honeysuckle. One had a hole in the side and appeared dead. The other, though, seemed perfect. The pupa was left in place, and a female emerged on July 3rd 1982.

The weather in Bradford during the period when the larvae were outside was in no way superior to normal. The fact that the larvae survived to the adult stage cannot, therefore be attributed to favourable conditions, and suggests that this butterfly might be able to maintain itself in the Southern Counties of England if it ever occurred in sufficient numbers. — R. J. D. TILLEY, 15 Shay Close, Bradford BD9 6SJ, W. Yorkshire.

VANESSA INDICA (HERBST) IN WARWICKSHIRE: NEW TO BRITAIN

By KEITH TURNER*

When I lived at Kites Hardwick, near Dunchurch, Warwickshire I made a small collection of British butterflies for display to farmers and others at meetings on conservation topics, the connection between several *Vanessid* species and nettles being particularly relevant. In early September 1973 I caught in my garden, alighting on flowers including a clump of *Phlox drummondii*, a specimen which I took casually to be *Vanessa cardui*. I papered it almost at once after capture, and it was only when I set it in November that I noticed the "strange" markings, more akin to *V. atalanta*, though the colour seemed right for *V. cardui*. I decided that it was an aberration of one of these species, and made a mental note to show it to a colleague more knowledgeable about butterflies.

However, it was only much later that my friend and colleague Mr. J. Firmin, co-author of "*The Butterflies and larger Moths of Essex*", visited my present house in Gloucestershire in the spring of 1982. He immediately spotted the specimen, and suggested that it could be an example of *V. indica*, which is found in the Far East and also in the Canary Islands and Madeira. He reported this find to the Editor of the *Entomologist's Record*, and his identification has been confirmed by Mr R. F. Bretherton and Dr. L. G. Higgins. The specimen has now been given to the British Museum (Natural History) for a place in the national collection. I understand that it is believed to be the first known record of *V. indica* in Britain.

[This specimen is a large female of 60mm wingspan, the wings slightly rubbed in the basal area, but apparently without fading of colour. The bands on the fore and hind wings are reddish-orange, rather brighter than the colour of *C. cardui* but not approaching that of fresh, or even of faded, specimens of *V. atalanta*; the four white spots on the forewings are large and prominent. Indentation of the margin of the hindwings and of the sub-apical margin of the forewings is slight. Comparison with specimens kindly shown to me by Dr. Higgins in his collection, and also with long series at the British Museum, shows that this specimen almost certainly belongs to *V. i. indica* (Herbst) and not to *V. i. calliroe* Hbn. (*vulcania* Godart) from the Canary Islands and Madeira. In the latter the forewing bands are bright rosy red, though some fading may occur in old or worn specimens; the white spots are usually reduced in size; and the apical and hindwing margins are more deeply indented than in *V. i. indica*, and most specimens are markedly smaller.

The distribution, relationship, and differences of *V. i. indica* and *V. i. calliroe* have recently been fully studied in R. Leestmans, *Problemes de Speciation dans le genre Vanessa: Vanessa vulcania*

*The Red House, Pillows Green, Staunton, Gloucester GL19 3NU.

Godart stat. nov. et *Vanessa buana* Frhst. stat nov., bona species (*Linneana Belgica*, 1978, pars VII, 130-156).

The means of arrival of this specimen in Warwickshire can only be speculative. Examples of *V. i. callire* might possibly reach Britain as immigrants, as probably occurs occasionally in Portugal and south Spain, but for *V. i. indica*, whose nearest known place of residence is north west India, importation in early stages with produce or escape from some unreported breeding in captivity seem to be the least unlikely sources. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, Surrey GU5 0LE.]

MELANIC FORM OF LOBOPHORA HALTERATA HUFN.: SERAPHIM (LEP.: GEOMETRIDAE). — On 2nd 1982, I took in my garden m.v. trap at Dartford, a melanic male of this moth, black with grey submarginal line. On referring to the comprehensive list of melanic forms found in Britain in Appendix B of Kettlewell's *Evolution of Melanism* (1973), I was surprised to find no mention of this species. Later, while discussing the capture with Mr. R. G. Chatelain, he mentioned that a melanic ab. of this species — ab. *nigra* Warnecke — was referred to in his copy of M. Koch, *Wir Bestimmen Schmetterlinge*. Recently, whilst visiting the British Museum (Natural History), Mr. Chalmers-Hunt kindly checked the species in the private collection there, and found 15 specimens of ab. *nigra*, all taken by E. B. White at Bristol between 1926 and 1935.

This melanic form would appear to be both extremely local and rare in Britain; if it is an industrial melanic it will almost certainly be dominant with homozygote and heterozygote indistinguishable in appearance (Kettlewell, 1973). It would be interesting to know if the Bristol location for ab. *nigra* is still known, if the form still occurs there, and if so, how commonly. — B. K. WEST, 36, Briar Road, Bexley, Kent.

THE FEATHERED BEAUTY: PERIBATODES SECUNDARIA D. & S. IN SUSSEX. — When I visited Mr. S. Church at his home at Plaistow, Sussex on the 14th July 1982, he showed me a female *Peribatodes secundaria* which he had taken in his garden trap the previous night. That evening there I saw a further four *P. secundaria*, all very worn males. It would seem therefore that to Mr. Church falls the distinction of being the first to record this species outside its Kentish locality. — R. G. CHATELAIN, 65, East Drive, Orpington, Kent.

AN EARLY APPEARANCE OF ERANNIS DEFOLIARIA CLERCK: MOTTLED UMBER. — On the night of 6 September 1982 a male specimen of this species was taken in a Rothamsted light trap in Monks Wood National Nature Reserve. Normally it does not appear in Monks Wood until mid October or later. The earliest previous record known to me was a male taken in the same trap on 25 September 1977. — J. N. GREATOREX-DAVIES, The Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs. PE17 2LS.

SCOTTISH MICROLEPIDOPTERA NOTES FOR 1981

By K. P. BLAND *

In spite of the poor weather in the 1981 season, the following records and notes are worthy of mention:—

Micropterix thunbergella (Fabr.). A specimen of this species taken at light on the night of 18/19.v.1981 in Milton of Drimmie Wood SSSI, near Blairgowrie, Perthshire (O.S. Grid Ref. NO/1651; V.c.89) constitutes the northern-most record to date (see Anon. 1981).

Johannsonia acetosa (Stt.). A single imago of this species was reared from its characteristic coiled mines in *Rumex acetosa* L. collected at Aucheninnes Moss, Dalbeattie, Dumfriesshire (O.S. Grid Ref. NX/8460; V.c. 72) on 13.vi.1981. The imago emerged on 28.vi.1981. This appears to be the *first Scottish locality* for this species which previously was not known north of Nottinghamshire (Emmet, 1976).

Adela croesella (Scop.) A single fresh female taken among brambles just behind the salt-marsh of Caerlaverock N.R., Dumfriesshire (O. S. Grid Ref. NY/0066; V.c. 72) on 13.vi.1981 gives us a third locality in Scotland for this rather secretive species. In the immediate vicinity were bramble, raspberry, rose, hawthorn, elder and alder but no privet, sea buckthorn, elm or ash!

Choreutis punctosa (Haw.). Imagines of this species, confirmed by inspection of the genitalia, were reared from larvae feeding on *Scutellaria minor* L. at Gorton Bay, Isle of Coll (O.S. Grid Ref. NM/1753; V.c. 103) on 24.vii.1981. This appears to be a *new food-plant* for this species and currently the most northern record.

Coleophora hornigi Toll (= *violacea* Strom). This species is quite widespread in Southern Scotland. A case collected off ALDER in Methven Wood SSSI, Perthshire (O. S. Grid Ref. NN/0526; V.c.88) on 18.x.1980 produced an imago of this species on 16.vi.1981. Further cases referable to this species were found on ALDER at the Endrick Mouth, Loch Lomond NNR, Dumbartonshire (O.S. Grid Ref. NS/4287; V.c. 99) on 4.x.1981 and on HAZEL at Henderland Bank SSSI, Cappercleuch, Peebleshire (O.S. Grid Ref. NT/2423; v.c.78). Alder appears to be a new foodplant for this species.

Coleophora genistae Stt. Several early larval cases and two later larval cases of this species were found feeding on *Genista anglica* L. on Rannoch Moor NR, Perthshire (O.S. Grid Ref. NN/4155; V.c.88) on 19.ix. 1981. This appears to be only the *second Scottish locality* for this species, previously only known from Granish Moor, Inverness-shire (Pelham-Clinton, 1959).

Coleophora argentula (Stph.). Several larval cases referable to this species were found on the dead flowerheads of *Achillea millefolium* L. at Yellowcraigs NR, East Lothian (O.S. Grid Ref. NT/

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5285; V.c.82) on 27.ix.1981. This appears to be the *first Scottish record* for this species.

Coleophora sylvaticella Wood. This species appears to be widespread at least in Eastern Scotland. It has now been recorded from Airhouse Wood SSSI, Hartside, Berwickshire (O.S. Grid Ref. NT/4753; V.c.81); Crichton, Midlothian (O.S. Grid Ref. NT/3961; V.c.83); Craighall Gorge SSSI, Perthshire (O.S. Grid Ref. NO/1748; V.c.89) and Colpy, Aberdeenshire (O. S. Grid Ref. NJ/6334; V.c.93).

Phalonidia minimana (Car.). Three specimens of this species were taken at Blackpool Moss, Whitlaw Mosses SSSI, Selkirkshire (O.S. Grid Ref. NT/5129; V.c.79) on 3.vii.1981. Identification was confirmed by examination of the genitalia of one of the two male specimens — the cornutus being longer than half the length of the aedeagus (Razowski, 1970). This is the *first authenticated Scottish locality* for this species; previously recorded from Port Appin, Argyllshire (Bradley, Tremewan & Smith, 1973) in error (Pelham-Clinton, 1982).

Aphelia unitana (Hubn.). A *second Scottish locality* for this species is Whitlaw Mosses SSSI, Selkirkshire (O. S. Grid Ref. NT/5129; V.c.79). The species was quite common in both Murder Moss and Blackpool Moss on 3.vii.1981. Previously it was only known in Scotland from Teviothead, Roxburghshire (Bland, 1980).

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DIORYCTRIA SCHUETZEELLA FUCHS IN JUNE 1982. — On the morning of 22nd June a specimen of this moth appeared in my m.v. trap, and on 26th and 27th June Mr. B. Goater visited me and we took several specimens in the spruce plantation in my neighbour's grounds, working with m.v. over a sheet. The species has appeared here just a month earlier than last year, when I took the first specimens identified as British. — M. W. F. TWEEDIE, Barn House, Rye, Sussex. TN31 7PJ.

FURTHER RECORDS OF PHORIDAE (DIPTERA) FROM COCOONS OF CIMBICIDAE (HYMENOPTERA)

By A. D. LISTON*

I have collected a further two *Cimbex femoratus* (L.) cocoons containing 6 and 17 puparia of *Megaselia giraudii* (Egger) from soil under birches, Whitadder Valley, East Lothian, 13.iv.1979. 2 ♀♀ emerged on 20.iv.1979 and were determined as *M. giraudii* by Dr. R. H. L. Disney. Also one cocoon of *Trichiosoma lucorum* (L.), containing 3 old puparia apparently identical with those of *giraudii*, was removed from a birch twig at Hopes Reservoir, East Lothian, 5.xii.1979.

As previously stated (Liston, 1979), the only reason why Phoridae do not infest *Trichiosoma lucorum* to such an extent as they do *Climbex femoratus* appears to be because of the site chosen for overwintering. This is in the soil for all *Cimbex* spp. and some *Trichiosoma*, but the cocoon is spun on a twig of the hostplant in *T. lucorum* and *T. tibiale*. The remains of any dead *Trichiosoma euonymphs* in their cocoons above ground desiccate easily while those of *Cimbex* in the soil are kept damp and are presumably more attractive to female phorids because of the odour given off. Only 1 *Trichiosoma lucorum* cocoon containing phorid puparia has been found in over 330 examined. Conversely, I have examined only about 25 *Cimbex* cocoons, 3 of which have contained puparia.

Dr. Disney's determination of *giraudii* confirms his earlier tentative determination made from puparia. Disney (1979) lists numerous rearing of *giraudii* from insects (chiefly Lepidoptera), most of which appear to have been moribund.

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* 99 Clermiston Road, Edinburgh, EH12 6UU.

EGGS LAID BY A DECAPITATED MOTH. — A Muslin Moth, *Diaphora mendica* Clerck, which I caught on the Downs near Beachy Head, Sussex, on 31st May 1982 was unfortunately decapitated as I enclosed it in a box. Arriving home an hour or two later I was surprised to find a few eggs had been laid on the box-side where it was suspended. More were laid later, on the floor of the box, as I watched. Its head was also on the floor. Egg-laying continued for two more days; there were two separate groups as well as the few on the side. The larvae emerged a few days later and were reared on Soft Sowthistle until 1st July when, having to leave home, I released them on Seaford Head. — Miss B. A. KNELLER, 9 Ashurst Road, Seaford, E. Sussex BN25 1AH.

THREE NEW LYCAENID BUTTERFLIES FROM THE SOUTH WESTERN CAPE PROVINCE

By C. G. C. DICKSON, M. Sc.*

Nos. 57 - 59

A new *Lepidochrysops* Hedicke

This is a striking, small, blue member of its group, which was caught by Messrs. V. L. and E. L. Pringle at Towerwater, a highlying locality in the eastern portion of the South Western Cape Province, about 46 miles from the coast. The first five, male, specimens were captured on 21st November, 1979, and further examples were secured on a second visit to the locality in the following year; also others still later, in 1981. In the short description hereunder in which the butterfly's salient characters only are given, comparisons are made with *Lepidochrysops oreas oreas* Tite (*Entomologist* 97: 4, figs. 4 - 6 (1964)), to which the present insect shows a fairly close relationship and was in fact noted in this paper.

Lepidochrysops pringlei spec. nov.

Male.

The forewings are less produced apically than in *Lep. oreas oreas* Tite.

Upperside.

Compared with *L. o. oreas*, the ground-colour is of a deeper and richer violaceous-blue; there is a broader black distal border to the forewing (some 2-2.5 mm. in width) and in the hindwing a definite and fairly broad black costal border, with some black suffusion extending into at least part of area 6, and some broadening of the narrow black distal border. On the latter wing the submarginal dark marking in areas 3-6 is, however, less well developed than in *L. o. oreas*, or may be hardly apparent in 3-5, but with the black spot in area 2 always well defined.

Underside.

Ground-colour of all wings of a darker (brownish-grey) tone than in *L. o. oreas* and the dark marking in general with finer and rather more clear-cut white edging. In the present taxon there is, in the forewing, a distinct, dark (narrowly white-edged) elongated marking (representing one of the components of the submarginal series) close to the lower angle of the wing which, in *L. o. oreas*, is filled in (or at least virtually so) with white scaling; and this also applies, if rather less consistently, to the corresponding marking in the hindwing. In the forewing the dark discal series is distinctly less sinuous, in most specimens, than in *L. o. oreas* - i.e., in the latter taxon, the upper half of the series is normally more strongly convex outwardly and the lower half, more so inwardly. The components of the series are less prominently white-edged, especially outwardly, than in *L. o. oreas*. The series of sagittate white markings occurring postmedially in the hindwing tending as a whole to be a little less irregular and often, if not always, being narrower and more sharply defined.

Length of forewing: 15.0 - 18.0 mm. (17.0 mm., in holotype).

The body and ancillary parts are very similar to those of *L. o. oreas*, with some of the hairs of the body possibly a little darker.

*"Blencathra", Cambridge Avenue, St. Michael's Estate, Cape Town.

♂ Holotype, SOUTH WESTERN CAPE PROVINCE: Toverwater, 21.XI.1979 (E. L. Pringle); British Museum Reg. No. Rh. 18704.

Paratype in Coll. British Museum: Zwartberg Pass, 9.XI.1946, one ♂ (K. M. Pennington).

Paratypes in author's collection: data as for holotype, 14.XI.1981, one ♂ (E. L. Pringle). Summit, Zwartberg Pass, 29.XI.1969, one ♂ (C. W. Wykeham).

Paratypes in Coll. V. L. and E. L. Pringle: as holotype, 21.XI.1979, three ♂♂ (V. L. Pringle), one ♂ (E. L. Pringle); 14.XI.1981, three ♂♂ (E. L. Pringle).

Paratype in Coll. Transvaal Museum, as holotype, 14.XI.1981, one ♂ (E. L. Pringle).

Paratypes in Coll. C. W. Wykeham: Summit, Zwartberg Pass 29.XI.1969, three ♂♂ (C.W.W.).

As would have been expected in a closely related taxon of the present group, the male genitalia of *L. pringlei* are very similar as regards most of the components to those of *L. o. oreas*, i.e., if some allowance is made for some degree of individual variation in specimens, especially with respect to the distal end of the valves. As discovered in the first place by Dr. C. B. Cottrell, the lateral sclerites at the distal end of the aedeagus can provide useful distinguishing characters in the various species of *Lepidochrysops*. After the main dorsal "dip" in each lateral sclerite, in *L. o. oreas*, there is a small, distinct bulge, before the final decrease in width at the extreme distal end of the sclerite. But in a preparation of the genitalia of *L. pringlei* there has been a smooth dorsal outline towards the extreme distal end of each sclerite, without any small, distinct bulge. (The lateral sclerites and valves of *L. o. oreas* and closely allied blue *Lepidochrysops* species have been figured and described by Mr. G. E. Tite in *Entomologist* 97: 1-7 (1964)); while the present writer has figured and described the male genitalia of *L. o. oreas* and two related taxa in *Entomologist's Rec. J. Var.* 86 (3): 65-68 (1974)). In the case of *L. pringlei* the lateral sclerites have differed also from those of a taxon which has been described by the writer as a subspecies of *L. oreas* (*op. cit.*).

Toverwater (which can be translated as "bewitched water") is at the eastern extremity of the Zwartberg Range; and the specimens concerned were caught at a high altitude. Mr. Victor Pringle, who has climbed the mountain on several occasions, sometimes with his son Ernest, has referred to the locality, in a letter of 7th February, 1982, as follows:—"The range at this point falls away at the eastern end where the river and railway line cut through it. The north face slopes away steeply in rough broken ground, fairly sparsely covered in short bushes, while the south slope drops sheer in places and then falls very steeply to the valley below, and is covered in rocks and dense scrub, extremely difficult to penetrate.

"Only males of this insect were seen. They appear suddenly and circle and dash around swiftly, and then disappear as suddenly. If not taken quickly the opportunity is lost—they appear to be extremely restless, and are very swift in flight."

As indicated by the data which are included with the description, this butterfly, regarded at one time as a form of *L. oreas* Tite, was captured on much earlier occasions on the main portion of the Groot Zwartberg — as well, however, as specimens which are at least very close to it, and found further westwards, as on the Klein Zwartberg, at Seven Weeks Poort.

The writer has much pleasure in naming this beautiful insect after his friends Messrs. V. L. and E. L. Pringle — both of whom have added so much, over the years, to our knowledge of the South African butterflies.

Grateful thanks are due to Dr. L. Vári of the Transvaal Museum for his courteous and prompt help in loaning specimens which had a bearing on the foregoing study; and to Mr. R. I. Vane-Wright of the British Museum (Nat. Hist.) for his most kind assistance with colour-photographs of specimens of relevant significance.

(To be continued)

A. H. HAWORTH'S ENTOMOLOGICAL "PICTURES". — Among Adrian Hardy Haworth's many revealing comments about the contemporary scene in his *Lepidoptera Britannica* (London, 1803 [-28]) is the observation following his account of the "Clifden Blue", *adonis*, now *Lysandra bellargus* (Denis and Schiffermüller), the Adonis Blue. Haworth wrote that "Adonis, being by far the most lovely of the British Blues, is much sought after by our inferior collectors; who make annual and distant pedestrian excursions, for the sole purpose of procuring its charming males, to decorate their pictures with; a picture, consisting of numerous and beautiful *Lepidoptera*, ornamentally and regularly disposed, being the ultimate object of these assiduous people in the science of Entomology. These pictures are of various shapes and sizes: I have seen some which have contained 500 specimens" (I, 1803, 44-45.) Also in the *Lepidoptera Britannica*, writing about *Issoria lathonia* (L.), he stated that "my friend Dr. F. Skrimshire [Fenwick Skrimshire of Kettering, Northants, a member of Haworth's third Aurelian Society] assures me, he has seen a specimen of it in some picture, which was taken many years since in his father's garden" (I, xxviii.)

Frames of *Lepidoptera*, more or less ornamentally disposed, were (and still are) used as wall decorations. Many years ago I discussed the *bellargus* passage with the late P. B. M. Allan, who remembered seeing decorative frames of butterflies in inns and elsewhere during his younger days (he was born in 1884). But neither of us knew of entomological "pictures" so old as to be from Haworth's period, and Mr. Allan felt that Haworth had something in mind other than the dreary constructions familiar (at least by description) to antiquaries. Certainly he was not referring to those entomologists who arranged their insects in geometrical patterns in the drawers of their cabinets, an eighteenth-century conceit. Have any readers of the *Record* encountered English "pictures", especially of such great extent, fitting Haworth's descriptions? — RONALD S. WILKINSON, 228 Ninth Street, N. E., Washington, D.C. 20002, U.S.A.

FLUCTUATIONS IN ABUNDANCE OF COCCINELLIDAE

By DENIS F. OWEN*

Even the casual observer cannot fail to notice that the numbers of ladybirds (Coccinellidae) fluctuate markedly in abundance from year to year. Yet despite this there seems hitherto no attempt to assess the magnitude of such fluctuations over a period of years. This paper describes the results of sampling ladybirds in a Malaise trap operated continuously for ten consecutive years (1972-1981) in a garden in the suburbs of Leicester.

The garden is 55 years old and is therefore mature and well-established. It covers an area of 658 m² and is situated at the corner of a busy road 3.8 km from the centre of the City of Leicester. Like all gardens it is a mosaic of open spaces and shade and contains the rich variety of trees and plants so characteristic of older suburban gardens. A fuller description is given in Owen (1981).

A Malaise trap is an open-sided tent-like construction of fine netting with an internal baffle of netting, supported by poles and strings. Flying insects wandering into the trap tend to fly upwards on meeting the central baffle and eventually fall into a pot containing 70% alcohol at the apex. No attractant is used and so the only insects caught are those that enter the trap of their own accord. All insects trapped are of course killed but the effect of the trap on the garden fauna is negligible because it samples an area of only 2.6 m² to a height of 1.1 m. A colour picture of the Malaise trap set in Leicester garden is reproduced in Owen (1978). During the ten-year period, 4260 ladybirds of eight species were trapped.

Table 1. Fluctuations in numbers of Coccinellidae caught in a Malaise trap in a garden during ten consecutive years.

	1972	1973	1974	1975	1976*	1977	1978	1979	1980	1981	Total
<i>A. 2-punctata</i>	168	324	155	424	346	359	239	30	129	53	2227
<i>A. 10-punctata</i>	4	1	4	9	25	20	8	1	9	4	85
<i>C. 7-punctata</i>	4	—	—	121	564	86	33	17	18	2	845
<i>C. 11-punctata</i>	2	—	1	108	98	12	2	—	—	—	223
<i>T. 22-punctata</i>	1	16	—	14	39	3	—	—	—	—	73
<i>P. 14-punctata</i>	15	8	8	38	346	160	38	149	29	14	805
<i>C. 14-guttata</i>	—	—	—	—	1	—	—	—	—	—	1
<i>C. renipustulatus</i>	—	—	—	—	—	—	—	—	1	—	1
Total	194	349	168	714	1419	640	320	197	186	73	4260

* These figures are slightly higher than those given in Owen (1976b), an article published just before the 1976 season was over.

During the first three years (1972-1974) the weather was not unusual, but in the summer of 1975, particularly in the first two weeks of August, it was unusually hot and sunny and rainfall was

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scarce. Then in 1976 there was a severe summer drought, probably the most spectacular for about 250 years. By mid-August the land was parched and brown, the grass had stopped growing, and the patch-work quilt of many coloured fields, so typical of the English countryside, faded to a uniform pale brown. "Plagues" of ladybirds were reported the length and breadth of the country (Owen 1976a). The summers of 1977-1981 saw a return to the kind of weather experienced in 1972-1974, but the effect of the 1975-1976 weather on the insect fauna of the garden did not entirely disappear until 1980.

What happened to ladybirds in each of the ten years is summarized in Table 1. As shown, there were conspicuous year to year fluctuations in abundance of the six common species (two species appeared once only). In the best year (1976) about twenty times as many ladybirds were trapped as in the worst year (1981), but each species fluctuated in abundance in a different way, as detailed below.

Adalia 2-punctata (L.)

This is the common garden ladybird in most places in England. In the Leicester garden larvae and adults feed on aphids associated with woody shrubs and trees. After hibernating the adults appear on the first warm days in March, mate and lay eggs in May and June, and produce a new generation of adults from July onwards. As shown in Table 1, *A. 2-punctata* was the commonest species in each year except 1976 when *C. 7-punctata* and *P. 14-punctata* became particularly abundant, and 1979 when the population collapsed.

Table 2. Monthly occurrence of *Adalia 2-punctata* in the Malaise trap, 1972-1981.

	Apr	May	Jun	Jul	Aug	Sep	Oct
1972	2	28	18	42	69	9	—
1973	19	72	163	58	11	1	—
1974	3	26	45	28	43	9	1
1975	13	22	113	147	82	34	13
1976	5	39	106	162	23	6	5
1977	1	75	39	68	102	66	8
1978	4	113	77	28	6	8	3
1979	—	4	8	4	10	4	—
1980	8	47	49	20	4	1	—
1981	1	11	6	3	21	6	5
Total	56	437	624	560	371	144	35

Table 2 shows the monthly occurrence of *A. 2-punctata* in the Malaise trap. Those taken in April-June were almost all hibernated individuals from the previous year (in some years, notably 1976, a few freshly emerged adults appeared in late June), while those

taken in July-October were mainly the new generation (with a few hibernated individuals lingering on into early July in some years). Overall, hibernated ladybirds were slightly more abundant ($N = 1117$) than the new generation ($N=1110$), but there are striking differences between years. Thus in 1973, 1978 and 1980 the May-June peak in abundance was followed by a decline in numbers in July-October, while in 1972, 1975, 1976, 1977 and (less obviously) in 1974 the May-June peak was followed by an increase in numbers in July-October. In 1979 and 1981 too few were trapped for any trend to be detectable. Evidently, then, in some years breeding in the garden is less successful and relatively fewer of the next generation are produced than in other years. Alternatively, a substantial proportion of those produced move away quickly and are not trapped. It is also possible, particularly in 1975 and 1976, that some *A. 2-punctata* moved into the garden in July and August to swell the resident population.

Adalia 10-punctata (L.)

The ecological requirements of this species appear to be similar to those of *A. 2-punctata*. It is not known to have bred in the garden but probably does so, at least occasionally. The adults were often seen feeding on the same clusters of aphids as the adults of *A. 2-punctata*. A few were recorded hibernating in dense vegetation. *A. 10-punctata* appeared every year in numbers ranging from one to 25 (Table 1). Records were scattered throughout each summer and even in 1976, the best year, there was no obvious evidence of an influx.

Coccinella 7-punctata L.

This is the common large ladybird which around Leicester feeds on aphids associated with low-growing, herbaceous vegetation, especially field crops. It is the one most often reported as "migratory" (Williams 1958), but whether it is a true migrant is a matter for conjecture. More likely it periodically irrupts and undertakes mass movements.

Table 3. Monthly occurrence of *Coccinella 7-punctata* in the Malaise trap, 1975-1981.

	Apr	May	Jun	Jul	Aug	Sep	Oct
1975	1	—	—	—	95	20	5
1976	1	18	4	321	173	38	9
1977	1	49	11	4	2	14	5
1978	7	24	1	—	1	—	—
1979	—	—	—	—	—	17	—
1980	10	5	1	1	1	—	—
1981	—	2	—	—	—	—	—

Four were recorded in the trap in 1972 but none in 1973 and 1974, although one was seen in the garden in late March 1974, suggesting successful overwintering. The sudden appearance of large numbers in 1975 and especially in 1976, followed by a gradual

decline until 1981 is strikingly different from the annual fluctuations in numbers of *A. 2-punctata*.

Table 3 shows the monthly occurrence of *C. 7-punctata* from 1975 onwards. One was recorded in April 1975, none in May-July, and then suddenly 95 in August, mainly in the first two weeks, with a further 25 in September and October. In August *C. 7-punctata* was extremely common in the garden, but no larvae or pupae had been found earlier in the season, strongly suggesting a movement into the garden from surrounding fields where, I think, the aphid food supply had failed. Substantial numbers remained all winter and were active whenever the weather was mild. Overwintered individuals were trapped in April-June 1976, and enormous numbers were found all over the garden mating and laying eggs. Subsequently larvae and pupae were found on herbaceous plants, providing the first positive breeding records. In July and August, at the height of the drought, adults became extremely abundant everywhere. In these two months *C. 7-punctata* was nearly twice as abundant in the trap as *A. 2-punctata*. Many overwintered and 61 were trapped in April-June 1977; thereafter numbers fell, despite successful breeding, and the species was less common in April-June 1978, and rare in July-October of that year. By the spring of 1979 there were few about and none was trapped until September when there was a considerable movement into the garden. This was followed by many overwintering, their reappearance in April-June 1980, but few records subsequently.

The events of early August 1975 thus started a chain reaction whose effect did not really disappear until the summer of 1980. This ladybird has bred in the garden every year since 1976 until 1981 when it disappeared as a breeding species.

(To be continued)

CARPOPHILUS MARGINELLUS MOTSCH. (COL., NITIDULINAE)
OUT-OF-DOORS IN SUFFOLK. — On 1 June, 1978, I found a single specimen of *Carpophilus marginellus* resting on low saltmarsh vegetation at Sutton, near Woodbridge, Suffolk (TM 2748). Mr. A. A. Allen in summarising the British out-of-doors records of this beetle (1958, *Entomologist's mon. Mag.* 94: 70) suggested that its occurrence in the wild was probably limited to the vicinity of stacks, dumps or other man-made habitats where extra heat from fermentation was available — cf. also subsequent records from Berks. (Woodroffe, G., 1969, *Entomologist's mon. Mag.* 105: 192) and Wilts. (Nash, D., 1976, *Entomologist's mon. Mag.* 111 (1975): 50). Although the Suffolk specimen may have been a straggler from such a habitat, there is a strong possibility that the beetle could have bred in the decaying, undisturbed tidal refuse which littered the area, and which would also have been able to provide the extra heat for out-of-doors development. Despite much sieving of the latter, no further examples were discovered.

I thank Mr. A. A. Allen for confirming my determination of the specimen. — D. R. NASH, 266, Colchester Road, Lawford, Essex, CO11 2BU.

FURTHER NOTABLE DIPTERA
FROM WINDSOR FOREST

By A. A. ALLEN, B.Sc., A.R.C.S.*

(Continued from page 194)

DOLICHOPODIDAE

(Ten or more species of *Dolichopus*, with others of the family, can be taken by sweeping the lakeside vegetation at Virginia Water.)

Hercostomus assimilis Staeg. — One, Virginia Water, vii.72; an uncommon species which I have taken also in N.W. Kent.

Hercostomus chalybeus Wied. — At the same place, scarce and apparently extremely local, vii-viii. 72. I have found it nowhere else. Fonseca (1978) cited this record and one from Old Windsor Wood (taken by Chandler, 16.vii.67) among 14 known localities.

Hercostomus chrysozygos Wied. — Two males of this very local species (easily recognized in that sex) by sweeping in a fire-break near Badger's Brook in the Forest, 24.vii.71.

Medetera ambigua Zett. — Two males on the butt-end of a well weathered portion of large old chestnut trunk left lying on the edge of a cleared part of the South Forest, along with two females of *M. impigra* Coll. (not scarce in the area), 24.vii.71. *M. ambigua* is another uncommon species taken by me in N.W. Kent (one only).

Achalcus melanotrichus Mik. — An example emerged from mould out of an elm stump at H. Hill, 21.vi.71. Not as rare as generally supposed, if sought in the right situations.

PIPUNCULIDAE

Verrallia beatricis Coe. — A female swept a little way inside the forest at H. Hill with 2 ♀ *V. villosa* v. Ros. (a close ally), 8.vi.71. The differences were very clear — the *beatricis* agreeing perfectly with a ♀ from my Blackheath garden.

SYRPHIDAE

Didea fasciata Mcq. — A ♀, only the second individual I have met with of this conspicuous and uncommon genus, was caught at elder blossom, with an *Epistrophe grossulariae* Mg., at the edge of the forest at H. Hill, 17.vi.71. Recorded by Chandler (1971) who tells me that it occurs regularly in small numbers in May and June at H. Hill.

(*Epistrophe diaphana* Zett.) — Recaptured in the Forest on 17.vii.71 — a ♀ visiting hogweed flowers near Badger's Brook. One previously in 1940 (Allen, 1965).

Leucozona glauca L. — My sole encounter with the species hitherto was on 24.vii.71 — a pair caught at the same spot and in the same way as the last. Taken in the Forest by C. O. Hammond

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(Chandler, 1971). Like *Bibio pomonae* it is common in the north and west but very local in the south-east.

Leucozona laternaria Müll. — Far more general than *glauca* although found singly as a rule, and mentioned here as Chandler gives no Windsor record. It occurred to us in both the Park and the Forest on umbels of *Heracleum*.

Melangyna guttata Fall. — A male of this rather rare hover-fly on hedge-parsley flowers, H. Hill, 3.vi.71.

Parasyrphus lineola Zett. — At flowers of bramble and stitchwort in June and July; apparently widespread but somewhat scarce, mostly in the Forest but also in the Park. I have not found it elsewhere.

Cheilosia soror Zett. and *C. scutellata* Fall. — Single males of both species in the Forest, June 1940, not determined at the time of writing my earlier paper. As Mr. Chandler remarks, many more species of this genus than have yet been found must occur, including such common ones as *vernalis* Fall. and *impressa* Lw.

(*Eumerus ornatus* Mg.). — A second specimen (♂) of this decidedly infrequent species was netted by G. S. near the 'Xylota clump' (see below under *X. tarda*) at H. Hill, 17.vii.71, only a short distance from where I took the first in 1940 (Allen, 1965); like that one, it was settled on bare ground.

Chrysogaster macquarti Lw. — A few examples of this very local fly occurred on the lakeside at Virginia Water in July 1972 unaccompanied by any of the commoner members of the genus.

Orthoneura nobilis Fall. — Two or three on massed flowers of what may have been *Cotoneaster watereri* (covered with bees etc.) in the Park, 1.vii.72.

Parhelophilus frutetorum F. — In small numbers in company with the last; both must have come from some marshy place or ditch in the vicinity.

Anasimyia lineata F. — Rather common by the lake at Virginia Water. Not recorded by Chandler.

Mallota cimbiciformis Fall. — G.S. believed he saw one in the Park at the place for *P. frutetorum* above (same date), and another (which I too saw) on a wild rose in the Forest near Badger's Bridge (late July).*

Brachyopa pilosa Coll. — Males on sappy beech stumps in the latter area and one from hawthorn bloom, female swept from birch rather high up (all late May); both sexes from small sappy oak stump in the South Forest, June: males always prevalent. *B. bicolor* Fall., which I took in the Park in 1968 (Allen, 1968) did not recur, but Mr. Chandler took a ♂ at H. Hill, 1.vi.80, on a decaying beech with *B. pilosa*.

Brachyopa scutellaris Dsv. — Our most widespread species, but it turned up once only (♂, 3.vi.71, at H. Hill on fallen beech); I have taken but one other, in my old garden at Blackheath. *B.*

* On a recent visit to the Park (20.vi.82) Prof. J. A. Owen drew my attention to a fly on a hogweed umbel in the area referred to above under *Brachypalpus* which, duly netted, proved to be a fine *Mallota*.

insensilis Coll. seems far more frequent, and we found it at H. Hill on a sapping elm (its usual botope). *B. scutellaris*, however, is not confined to old woods as *pilosa* and *bicolor* tend to be, and Mr. Chandler informs me that he has found it at localities in 10 counties.

Xylota tarda Mg. — A scarce species in southern England and not known from the Forest, until I caught a male at H. Hill on or about rhododendron foliage, 17.vi.71. (We noticed that flies of this genus seemed uninterested in the flowers, but liked to bask on the leaves mostly low down, above all on one particular clump at H. Hill next to a large prostrate beech trunk, when lit by the afternoon sun.) I was on the point of rejecting the *tarda* as only an undersized *segnis* L. (the commonest species), but luckily thought better of it. On that memorable occasion, we took, jointly, all the then known British *Xylotae* within the space of an hour or two.

(*Xylota xanthocnema* Coll.) — This, along with *X. florum*, was to us the least frequent species in the locality after *tarda*. G.S. captured several, including a ♀; at the aforesaid rhododendron clump (4.vii.71), as well as a ♂ on 17.vi, and I netted a ♂ there on 17.vii. The spot is near where my two original males were caught (Allen, 1965).

(*Xylota sylvarum* L.) — Not nearly as common in the area as either *segnis* or *nemorum*. A ♂ settled on a beech trunk in the Park, 24th Sept. 1980, is perhaps worth noting because of the date.

(*Xylota lenta* Mg.). — Not found by us outside the special station at H. Hill where males were not uncommon in June 1971, also occurring singly deep in the shady-forest about beech timber, but for a week or two in that year only. I saw no female at any time.

(*Xylota nemorum* F.). — This proved common throughout the Forest (we did not definitely see it in the Park, except in the woods at Virginia Water), chiefly affecting stacks of cut beech boughs (oak rather less) as well as logs and stumps, and was much less in evidence on foliage — unlike the next two, etc.

Xylota abiens Mg. — More widespread than several of the species, occurring sporadically in the Park (♀, beech stump) and at Virginia Water (♀, swept by the lake), but as with *lenta* etc. its headquarters seemed to be on the edge of the forest at H. Hill; males not rare in early June, sunning on low foliage of rhododendron.

Xylota florum F. — Very local and scarce as a rule, but a good locality for it was discovered by G. S. near Badger's Brook, where he took several males on 17.vi.71 and a few more on later dates, some on umbels of hogweed, others low on sunlit alder foliage; I netted one from the latter on 17th July, and another male from rhododendron foliage some distance away near H. Hill, 17.vi.72. The two specimens referred to *florum* in my 1965 paper were mis-determined, careful re-examination showing them both to be *abiens* (the small ♀ perhaps abnormal); the former species is thus in fact an

addition. (Note: in this genus, females are normally much less in evidence than males.)

(*Brachypalpus laphriformis* Fall. (*bimaculatus* Mcq.). — On 21st May, 1972, one was boxed by G.S. as it emerged from under loose bark high up on an oak trunk which he was working with the aid of a ladder, in an area of the Park lying to the north of the main Ascot road. On 2nd June, not far from this spot, we came upon a very few more (all males, I think) flying about and settling on the ground near a large old hulk of oak and low on the trunk of a beech nearby. They were not easily caught and we secured one each. (My 1940 specimen, wrongly recorded as a ♀, was in fact a ♂).

(*Caliprobola speciosa* Rossi). — Somewhat erratic and apparently localized, rare in 1971, much more frequent in the next two years. In the forest at H. Hill, (which we often visited), only one was seen, about an elm stump in early evening, 3.vi.71; but on 2.vi.72, in the Park, at the second spot mentioned under the last entry, we found it not very uncommon, then and on various later occasions that year and the next; though once or twice it failed to appear when conditions seemed right. Its habits here were precisely those of *Brachypalpus*, but it extended over a wider area which took in a large blown-down beech some distance away, in the high broken-off stump of which it was undoubtedly breeding. Most often these splendid flies settled on the ground, less often on the trunks etc., occasionally on nearby tree foliage; they only showed themselves in sunshine. Finally, one was seen to alight upon an oak stump in another more wooded part of the Park near Union Gate, 6.vi.73. Unlike most of those caught at may blossom in 1940, all captured specimens were males in perfect order, with the following exception.

On 3.vi.73, G.S. witnessed the oviposition-behaviour of a female at the broken-off beech already referred to, my note of which is worth quoting: — "The fly appeared hovering in the hollow of the trunk, settled on the surface of the wood-mould that half filled it, and quickly buried itself, scraping away the loose particles with its feet and almost disappearing from view after a few moments. In about half a minute it reappeared and flew straight up into the net placed over it." The remarkable feature of this observation is surely the rapidity with which the whole process was completed (assuming that an egg or eggs had actually been laid).

Criorhina asilica Fall. — We had the pleasure of meeting with this for the first time at H. Hill on 3.vi.71 (though already found by C. O. Hammond), each obtaining two — mine are both males. Except for one netted by G. S. a little inside the forest about an elm stump filled with wood-mould, they were flying around and alighting on flowers of rhododendron fairly high up at the forest edge. Curiously, we never for certain saw the species again, which seems nearly as scarce in the area as *C. ranunculi* Panz. Like *B. laphriformis* it is a good honey-bee mimic.

(To be continued)

THE NORTHERN RUSTIC: *STANDFUSSIANA LUCERNEA* (LINN.) (LEPIDOPTERA, NOCTUIDAE) IN LANCASHIRE.

By E. G. HANCOCK*

Barrett (1896) tells us that the Northern Rustic, *Standfussiana lucerneae* (Linn.), is said to be rare in Lancashire; South (1920) merely repeats this statement. Having examined the records available it does appear to be rather infrequently referred to in a Lancashire context. This would be especially so now that Furness and a considerable part of the west pennine moors have been removed to other political entities. Since the evidence for a discussion of the status of *S. lucerneae* as a Lancashire insect would almost entirely disappear under the new definition of the county it is decided to retain, mentally at least, the older boundaries. This is further reinforced by the fact that only one of the records is post 1974 (the date of local government reorganisation).

The preferred habitat and behaviour of *lucerneae* is described by Goater in some detail (in Heath and Emmet, 1979). There are few sea cliffs on the Lancashire coast and in any case there are no records of *lucerneae* from those that do exist. Inland, however, there are numerous natural and quarried rocky areas in the millstone grit of the pennine moors and limestone in north Lancashire. Here the data indicate that these areas are indeed those which support populations of the moth.

What prompted me to look at this species was the finding of a male example in a portable mercury vapour light trap in my own back yard on the night of the 14 July 1981, Astley Bridge, Bolton (NGR: SD 792118). This is a literal statement. The reason for the trap being set in the yard rather than the garden is another story. The house is less than half a mile from moorlands and extensive stone quarries on the north side of Bolton.

In the north west as a whole, the Lake District is an obvious place to find the Northern Rustic although it appears not to be as densely recorded as in North Wales. The only other specimen I have taken personally was at light at Ulverston, in Furness (SD 290788), 20 August 1968. The pennines which are represented by western extensions into Lancashire of the moors around the north and east of Manchester, Blackburn and Burnley are also likely to yield this species. This is obvious from the evidence of the more frequent records from the Yorkshire side in the area of Halifax, Huddersfield and Ilkley, for example.

So it is to the local literature that one must turn for records and after that the examination of public and private collections, followed by verbal contact. The county list of Lepidoptera (Mansbridge, 1923 & 1940) with an update (Smith, 1955) give Catlow, near Nelson (SD 88-36-) as a locality where it is not uncommon, recorded

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by Allan Brindle of Manchester Museum. Albert E. Wright found one "at Burnley" in 1918. Mr. Stuart Coxey, a Bolton collector, sent a record from the "Bolton Mosses". This he tells me (*in litt.* 30 Oct 1981) was a misprint for "moors" and is referable to a specimen in his collection dated 22 July 1951. It was caught at Horrocks Fold where the aforementioned quarries near my own residence are found. J. W. Baldwin, another Bolton naturalist, recorded it at Turton Toppings in Bolton (SD 72-13-) which is also less than a mile from these quarries. No date is given for this record but it is at least before 1875. Baldwin was primarily a conchologist and his collection came to the museum in Bolton. Although I have identified some microlepidoptera as having been collected by him there are no examples of *S. lucerneae* in the museum from any source until the Astley Bridge specimen in 1981.

The Nelson locality is repeated by Woods (1968) and it still occurred in a quarry there at that time. The only other modern record is represented by a post-1960 solid dot on the distribution map given in Heath & Emmet, 1979. This is for the square SJ79 which covers the low lying land around Salford and would appear to be unlikely area for this species. If the record is not in error then the western part of this ten kilometre square includes the remains of some of the famous south Lancashire mosses, Chat and Carrington, where it is conceivable the moth may breed. John Heath informs me (*in litt.* 26 Aug. 1981) that another record had been sent in to the Biological Records Centre at Monkswood for the square SD60. I have traced this record to Mr. Tim Melling of Bolton, a keen amateur collector now studying at Newcastle-upon-Tyne University. He generated the record on the basis of a manuscript note by another collector, Mr. Priddy of Westhoughton. It was only when Tim obtained this man's collection and was able to examine it closely that the record proved to be unfounded. It was based on a worn example of the variable Dotted Clay, *Xestia baja* D. & S. Another manuscript, a list of the lepidoptera of Bolton by Mr. S. Reade of the Bolton Field Naturalists' Society compiled in 1930, does not record the Northern Rustic.

Various friends and colleagues in the north west have provided negative information following a request for recent records. It remains to say that I saw one flying in a classic manner in suitable habitat at Tockholes, near Darwen (SD 6620) on 27 August 1981. The evidence appears to indicate that the Northern Rustic is not widespread but occurs irregularly in its preferred habitat and is probably under-recorded. Skidmore (1964) states that the fauna of moorland is unstable with some insects continually disappearing to be replaced by others, or the same species turning up again after a lapse of some years. *S. lucerneae* is selected as an example of this phenomenon, among other lepidopterans. The records from the Bolton moorland localities would seem to support this theory although there has not been continuous local recording over the last thirty or forty years in sufficient detail to be sure of this.

The national distribution of *lucerneae* is slightly odd. It is recorded from high ground inland in the pennines, Lake District

and Wales. Elsewhere it appears to be restricted to coastal areas. This leaves huge tracts of apparently suitable high ground for this species such as in Scotland, Ireland and the south west of England from which it is absent. Is this a genuine absence and if so for what reasons?

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MARGARET FOUNTAINE: THE FATE OF MANY OF HER BOOKS AND SOME OF HER NOTES. — In her Will in 1940, Margaret Fountaine bequeathed many of her books and some of her notes to 'the youngest member of the Royal Entomological Society'. At that time, this turned out to be a young American, a Mr. J. Dennis Cowper, who returned to the States presumably with much of the background to Margaret Fountaine. His last known address is in Los Angeles, but we have learned that the building has now been demolished.

We should much like to know of the whereabouts of this valuable collection of books and papers, and request anyone with information to write to: The Editor, Entomologist's Record, 1 Hardcourts Close, West Wickham, Kent BR4 9LG, England.

THE SILVER-SPOTTED SKIPPER: *HESPERIA COMMA* L., A NEW LOCALITY NEAR EASTBOURNE. — On the 21st August 1982, I was pleased to note a single female example of this scarce butterfly on the edge of the South Downs near Eastbourne. To my knowledge this is the first time the species has been recorded at this site which seems ideal for the insect. — M. PARSONS, The Forge, Russells Green, Ninfield, Battle, E. Sussex.

A NEW FOODPLANT FOR *SYNTARUCUS PIRITHOUS* L. — A single female *S. pirithous*, observed in the wild on Spetses island, Greece, in late August 1982, was seen laying eggs singly on the flower buds of an ornamental climbing *Jasminum* plant. I believe this to be an as yet unrecorded foodplant for this butterfly. — J. G. COUTSIS, 4 Glykonos Street, Athens 139, Greece.

TREASURER'S NOTICE

It is with regret that I have to report that the *Record* has been running at a loss for much of this year, and that a rise in subscriptions will be necessary as from the beginning of Volume 95 (1983). In the coming year, we can expect printing costs to rise at least in accordance with the rate of inflation, and there is also the possibility of increased postal charges. To make matters worse, the decline in interest rates will reduce the income from our deposit account. It has therefore been decided that the subscription rates for next year will be £10.00 (U.K.) and £11.50 (Overseas): the increased differential is due partly to postage and partly to the high cost of clearing foreign cheques. If you pay by Standing Order, please be sure to provide your bank with the new details well before payment will be made.

In order to minimise costs, I make two requests. First, please pay on or before January 1st – the printers are normally paid before the journal is despatched, so the money is needed at the beginning of the month. Unfortunately, we shall not be sending out any copies of the journal for which payment has not been received. Second, if you decide not to renew your subscription, please let me know in good time, as this saves the expense of sending out reminders.

P. J. JOHNSON, Hon. Treasurer.

Notes and Observations

FLIGHT TIME OF RINGLET: APHANTOPUS HYPERANTUS L. IN SCOTLAND. – Over the last five years butterfly numbers have been assessed at two NNR's in east Fife, Scotland using the method described by Pollard (1977). Records were obtained for Tentsmuir Point from 1978 onwards and Morton Lochs from 1979 onwards. These show interesting differences in the flying time of Ringlet between the two sites.

Year	1978	1979	1980	1981	1982
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Morton Lochs:

Annual population index		527	701	609	899
Flight time (weeks)		9	9	9	10

Tentsmuir Point:

Annual population index	4	49	174	184	572
Flight time (weeks)	4	6	7	7	8

Table 1. Observed flight time (in weeks) in relation population size at Morton Lochs and Tentsmuir Point, Fife.

At Morton Lochs the Ringlet has emerged between 18th and 28th June during the last five years. First emergence is about a week and a half later at Tentsmuir Point. Table 1. shows that although the annual population index obtained from the transect results has varied at Morton the flying period has varied little. In contrast at Tentsmuir where the local population was believed to be severely reduced by drought in 1976, the flight period has extended as the total number in the population has risen. The ten week flying time observed at Morton this year probably represents the maximum for Scotland since east Fife enjoys the highest recorded sunshine in the country. The emergence times reported here are within the range given by Thomson (1980). The flight period given by him, however, is only about one month. The above results suggest that the observed flight period is directly proportional to population size. — References: Thomson, G. 1980. *The Butterflies of Scotland*, Croom Helm, London.

Pollard, E. 1977. A method for assessing changes in the abundance of butterflies. *Biol. Cons.* 12, 115-134. — P. K. KINNEAR, 11 Hillview Road, Balmullo, St Andrews, Fife KY16 ODE

AN ITALIAN BUTTERFLY POSTER. — I have just returned from a visit to Italy (alas not a collecting trip), and I was amused to see in Cremona a poster with some white butterflies of uncertain genus and writing "A clean city brings butterflies", which seemed to me a *non sequitur*! — Canon PETER HAWKER, St. Botolph's Vicarage, 84 Little Bargegate Street, Lincoln LN5 8JL, 26.viii.82.

THE CONVULVULUS HAWKMOTH AND CLOUDED YELLOW IN SOUTH DEVON. — On August 31 a large female *Agrius con-rohuli* L. was found in my m.v. trap here following a cold moonlight night. And at Slapton Sands, two *Colias croceus* Geof. were seen on August 12 and one on August 19. — H. L. O'HEFFERNAN, 24 Green Park Way, Chillington, Kingsbridge, S. Devon.

THE CLOUDED YELLOW: *COLIAS CROCEUS* GEOF., AUTUMN 1982. — Whilst walking along Carlyon Bay, Cornwall (SX 060522) on the morning of 10th September 1982 in dull weather conditions a *C. croceus* flew up in front of me, it settled about 30yds. away which enabled me to confirm the identification. — A. J. BALDWIN, 33 Defoe Avenue, Kew Gardens, Surrey.

RHYACIA SIMULANS HUFNAGEL: DOTTED RUSTIC IN LINCOLNSHIRE. — Back in July 1980 I took a specimen of this species in my Robinson trap at home. This was the first record for the county of this central and southern moth. This year I have taken a total of five examples in and around Lincoln, which suggests that the species is established. Only one of these was at light. The others were found by day, actively fluttering in vegetation. The first was taken on 26th June and the last on 29th July. It would be interesting to hear more of the spread of this insect, which seems to be undergoing a population explosion, judging by other accounts in the *Record*. — M. TOWNSEND, 8 Cornwall House, Ravendale Drive, Lincoln, 22.ix.82.

THE LUNAR THORN : *SELENIA LUNARIA* D. & S. IN EAST SUSSEX. — A fine male specimen of this species appeared in the home run MV light trap on the 23rd July. This example seemed smaller and richer in colour than most other examples I have seen and presumably represents a second generation moth. — M. PARSONS, The Forge, Russells Green, Ninfield, Battle, E. Sussex.

BUCCULATRIX CIDARELLA ZELLER ON MYRICA GALE IN ENGLAND. — On the 3rd of September, 1982, in the company of Mr. E. C. Pelham-Clinton, Dr. J. D. Bradley and Dr J. R. Langmaid, I found *B. cidarella* feeding in some plenty on bog myrtle (*Myrica gale*) on the Arne National Nature Reserve, Dorset. Alder (*Alnus glutinosa*), the usual foodplant, was nowhere in sight, but the warden of the reserve told us that it occurred plentifully about half a mile away.

This is the first record of *B. cidarella* feeding on bog myrtle in England, the previous records having been made from north-west Wales and south-west Ireland. In most places where alder and bog myrtle occur together *B. cidarella* is confined to the former; when, however, it does accept the latter, it abounds on it. Hitherto it has proved immune from parasitisation when feeding on bog myrtle and this may be the explanation for the success of such colonies. — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

THE HIGH BROWN FRITILLARY: *ARGYNNIS ADIPPE* D. & S. IN S. CUMBRIA. — It was satisfying to find good numbers of this species during the 1982 season in one of its strong but geographically isolated colonies in South Cumbria. The site, undisturbed light scrub and woodland on limestone, is extensive and at the height of its flying season in July and early August this year, this was the most prominent and probably abundant butterfly. This supposition was backed up by regular transect counts where numbers were similar to the Small Pearl Bordered Fritillary and to associated grassland species such as Common Blue and Meadow Brown. Netting and release of specimens taken at random showed it to outnumber the Dark Green Fritillary by about 10/1.

At a time when the apparent national trend is for a decline in the species, the present relative abundance is encouraging and it is hoped this butterfly will continue to thrive in this locality. — M. J. Y. FOLEY, 87 Ribchester Road, Clayton-le-Dale, Blackburn, Lancs.

PARARGE AGERIA L. (SPECKLED WOOD) FEEDING ON DAMAGED APPLE. — For the most part the speckled wood butterflies visiting my Dartford garden this year behaved typically, flitting above in partially shaded situations, and on the flower border merely settled upon the leaves for brief intervals despite the profusion of flowers. However, on August 29th 1982, I noticed a specimen feeding upon a bird and wasp-damaged Laxton's Fortune apple hanging in a shaded position about six feet from the ground. On several occasions it left the fruit only to return after a short interval, and on each occasion was seen clearly to be feeding.

I think this occurrence unusual enough to warrant reporting, for the few references I have found of *P. aegeria* visiting fruit relate to blackberries, although actual feeding was not specifically mentioned, and to a plum where imbibing was noted (Bolingbroke, *Ent. Rec.* 65, 291).

In the entomological journals I have found numerous references to *P. aegeria* on the Continent, but no mention of it feeding; is this species seen imbibing from flowers and fruit there as infrequently as its subspecies in the British Isles? — B. K. WEST, 36 Briar Road, Bexley, Kent.

THE FIRST RECORDING OF TRICHOPLUSIA NI HBN. IN WARWICKSHIRE. — The first known recording of this rare migrant moth for Warwickshire, is of one taken by Mr. R. Thomas in his m.v. trap, at Hartshill Hayes in the north of the County on 18th September 1982. A second specimen occurred in my garden trap the following day, followed by another on 20th September. Mr. Roy Allen also recorded one in his garden trap at Marton on 20th September.

Other notable 1982 Warwickshire migrants recorded at Charlcote are as follows: 8th July and 21st August, *Spodoptera exigua* Hbn. (A. Gardner). 29th and 31st July, *Eurois occulta* L. (A. Gardner). 17th (2), 18th and 19th September, *S. exigua* (D. Brown). 19th September, *Macroglossum stellatarum* L. (A. Gardner). 20th September, *Agrius convolvuli* L. (A. Gardner). 23rd and 27th September, *Helicoverpa armigera* Hbn. (D. Brown and A. Gardner). 2nd October, *Orthonama obstipata* F. (D. Brown). — D. C. G. BROWN, Jacksons Farmhouse, 25 Charlcote, Nr. Warwick, Warks.

THE TWO-YEAR LIFE-CYCLE OF COLEOPHORA HEMEROBIELLA (SCOPOLI). — To my knowledge, the first assertion in the British literature that *C. hemerobiella* has a biennial life-cycle was made by R. W. J. Uffen in *A field guide to the smaller British Lepidoptera* (1979). Apart from stating that the final erect and straight case is made in the second spring, he gives no details of timing. The following note may therefore be helpful.

On the 30th of May, 1981, in the company of the Revd D. J. L. Agassiz and Dr J. L. Langmaid, I collected larvae of this species at Grays, South Essex (VC 18). Some were in the final case but four were still in the earlier pistol-shaped case. I sleeved (more precisely, nylon-stockinged) the small cases on a crab-apple in my garden and left them undisturbed for the next 13 months. My observations were intermittent and consequently I can give only approximate dates. By the end of June the larvae had ceased to feed and had fixed for aestivation on the twigs. Aestivation extended into hibernation without a break, the larvae remaining immobile for ten months. Towards the end of April feeding began again on the young leaves and the pistol case was soon abandoned for the final case, excised from the margin of a leaf near its base. I think Stainton (*The natural history of the Tineina* 5 : 76) is wrong in stating that the larvae make two straight cases, the second larger than the first; according to my observations, they go straight from the pistol to the final case.

Feeding continued until about the middle of June. At the beginning of July, when the cases were unmistakably fixed for pupation, I opened the sleeve for the first time and brought them indoors. The four moths emerged between the 12th and 20th of July, 1982. — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

LINCOLNSHIRE BUTTERFLIES. — Recently, there has been the sighting of two *Polygonia c-album* L.: Comma in Lincoln. One by myself on 18th September feeding on decaying pears with about 20 *Vanessa atalanta* L. The other was on 15th September by Messrs. Brian and Andrew Cunnington in their garden at ice plants. These are the first records of the Comma for the area and probably the county since 1971, and of a butterfly that was widespread in Lincolnshire up to about 20 years ago. It would be nice to think of the resurgence of this species in a county which has lost so many nymphalids and others, notably *Argynnis paphia* L., *A. adippe* D. & S., *Boloria selene* D. & S., *B. euphrosyne* L. and probably *A. aglaja* L. and *Euphydryas aurinia* Rott. One nymphalid is still in good numbers in the woods east of Lincoln, *Ladoga camilla* L., which was very early this year. — M. TOWNSEND, 8 Cornwall House, Ravendale Drive, Lincoln, 22.ix.82.

THE MARSH FRITILLARY: EUPHYDRYAS AURINEA ROTT. IN CUMBRIA. — Following up a previous note in this journal (J. H. Vine-Hall, *Ent. Rec.* 91: 24-5) on the status of the Marsh Fritillary in Cumbria, I visited in good conditions in early June this year the four extant sites therein described. At only two of these was the species present, however, and then only noted in very small numbers after prolonged observation (less than five separate individuals sighted at each). The other two colonies were apparently unoccupied although there is one recorded sighting for 1981 at one of these but none since 1979 at the other. A visit to a further previously suspected site revealed the species to be present (again less than five seen) which adds another to the total, and there are at least three other possible sites which need further investigation, discounting two others at which the species is probably extinct.

Thus the butterfly is just hanging on in very small well scattered colonies, and it is surprising that it can survive for long at such a low density. The Cumbria Trust N.C. is aware of the location of the sites, and it is hoped that the habitats can be protected and collecting avoided, so that this species, generally absent elsewhere in Northern England, can build up numbers again. — M. J. Y. FOLEY, 87 Ribchester Road, Clayton-le-Dale, Blackburn, Lancs.

THE DECLINE OF THE DUKE OF BURGUNDY: HAMEARIS LUCINA L. — We are conducting a study of the ecology of this butterfly the object being to determine the precise habitat requirements and habitat management requirements of the species. The study has the support of the Nature Conservancy Council (NCC) and is linked to NCC's 'Butterflies Under Threat' project. Information is urgently required from as many sites as possible and we would be delighted to establish contact with entomologists who are familiar with the species. Please write for further details either to

myself (for sites in eastern England) at the address below, or to Mr. W. G. Shreeves, 5 Butt's Mead, Shaftesbury, Dorset (for sites in the western half of England).

It may be of interest to add that while working on the ecology of the Duke of Burgundy at Selborne during the past few years, some useful discoveries have been made. For example, the main predator on *lucina* is a snail (*Monacha cantiana*) which, seemingly accidentally devours the ova on the Cowslip leaves. Does the same happen to the ova in other localities? So far we have received information from a number of entomologists, and initial indications suggest an alarming recent decline in the number of sites occupied by *lucina*, especially in woods. — M. R. OATES, The Lodge, Wyck Place, Wyck, Alton, Hampshire.

NYMPHALIS ANTIOPA L. AT SEA. — While fishing two miles off the southern coast of the island of Spetses, in Greece, in late October 1981, I observed a single *Nymphalis antiopa* flying about one metre above the sea and heading toward the island.

The only places in that area where this butterfly is resident, are the higher mountains of the Peloponnissos and its appearance near the island of Spetses must be attributed to forced migration due to adverse weather conditions in its natural habitat.

It is assumed that its journey must have started somewhere in the Parnon mountains of eastern Peloponnissos and that the butterfly covered a distance of about 20 kilometres, while flying over the sea. — J. G. COUTSIS, 4 Glykonos Street, Athens 139, Greece.

YPONOMEUTA EVONYMELLA (LINNAEUS) IN SOUTHERN ENGLAND. — I should be grateful for any information regarding the foodplant of this species in the south of England. Further north it feeds on bird-cherry (*Prunus padus*), often in great profusion, whole trees being sometimes completely covered in larval webs and entirely defoliated. In the south, bird-cherry is scarce and the few trees I have seen have not been attacked. Yet *Y. evonymella* occurs at low density even in areas where bird-cherry is apparently absent.

In 1970 I brought a web of these larvae home from Derbyshire. After the branch on which they were feeding had all been consumed, being unable to locate further supplies of bird-cherry, I tried them on leaves of damson-plum from the garden. Finding that they accepted this, I sleeved out half the larvae on the damson-tree. These ceased to feed and all perished. Those in the plastic box, which retained the remains and in particular the smell of the original foodplant, fed on and produced adults, all of which, however, were undersized.

In 1981 two adults appeared here in Saffron Walden at lighted windows. In 1982, when I was lent a light-trap for a few days in July, they were fairly common, about six appearing each night, but settling around the trap in preference to entering into it. The feature which struck me about these moths was that they were all undersized like those I have just mentioned.

It is possible that they had fed on blackthorn (*Prunus spinosa*).

but a specimen I took on the army ranges at Foulness on the 17th of July this year suggests otherwise. On Canvey Island and elsewhere in south-east Essex the brown-tail moth (*Euproctis chrysorrhoea* (Linnaeus)) is kept under control by council workmen. There is no public access to Foulness Island and there this necessary task is not performed. Consequently this pest occurs in unimaginable profusion. In whole areas the blackthorns, hawthorns and roses are literally stripped bare of all their foliage, leaving ugly skeletons festooned with larval webs. In an area where the bushes had been reduced to such a condition in 1981, the larvae had switched to scrub elm in 1982, presumably because the females had found the blackthorns they themselves had helped to defoliate quite unsuitable for oviposition. The blackthorns were beginning to recover but there is little doubt that 1983 will see the brown-tails renewing their assault.

The result is an almost complete absence of other species feeding on these plants. The hawthorn-feeders fare best because there is so much of it that some trees escape. Blackthorn seems to be the favourite foodplant of the brown-tail, and its other associated species, especially the leaf-miners, are absent or excessively rare. For example, of the four *Coleophora* species so common at Benfleet, I have found only *C. anatipennella* (Hübner) very sparingly, this being one which has alternative foodplants. I have never seen *Yponomeuta padella* (Linnaeus) at Foulness, but its close relative, *Y. malinellus* Zeller, abounds on apple-trees surviving from a former orchard. So unless my specimen of *Y. evonymella* had flown in, it is likely to have fed on some foodplant other than blackthorn.

All the Essex specimens of *Y. evonymella* which I have seen — those from Saffron Walden, Foulness and one or two other localities — have a common characteristic: they are undersized like those I fed on damson. What is their foodplant? — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

SPHINX LIGUSTRI L. (PRIVET HAWKMOTH): DISAPPEARANCE FROM N. W. KENT. — It is with regret that I comment on the apparent absence of this fine insect from urban N. W. Kent — the conurbation south of the R. Thames from central London to Dartford. The privet hawk moth used regularly to be seen on fences and telegraph poles, or injured on pavements and roads, while every year the caterpillars notified their presence by their excremental pellets beneath privet hedge, or overhanging lilac or laurustinus (*Viburnum tinus*), and beside waste land under saplings of ash. I last saw privet hawk caterpillars in this area in 1972, and the last visits of the moth to the garden m/v trap at Dartford were 1972 (two) and 1975 (two). Chalmers-Hunt in his *Lepidoptera of Kent Supplement* mentions an apparent decline of the species for the county as whole.

In the above-mentioned work the author suggests that the introduced species of privet, *Ligustrum ovalifolium*, is the most favoured larval pabulum in Kent, and states that he had only one record for the native *L. vulgaris*. However, in N. W. Kent the larvae could be found every year on the latter plant also, e.g. on Dartford

Heath, while where a hedge was composed of both species of privet, no preference for either was apparent. It was noticeable that often the same short stretch of garden hedge had caterpillars year after year. Once, in 1946, I found nine larvae at Dartford on snowberry (*Symphoricarpos*), and wonder if the plant was utilized more frequently than records suggest, for rarely do these bushes conveniently overhang the pavement. Finally, although holly is a well-known larval foodplant in the New Forest, and perhaps elsewhere, I know of no record of *S. ligustri* on this in N. W. Kent, where the plant is used commonly for hedging and as an ornamental shrub. — B. K. WEST, 36 Briar Road, Bexley, Kent.

SOME OF THE LESS COMMON SPECIES OF LEPIDOPTERA TAKEN AT BARCADDINE, ARGYLL, IN 1980 and 1981. — The following were among the less common Macrolepidoptera caught by a Robinson M.V. light trap (125 watt) sited at Barcaldine, Argyll (map ref: NM 964414) (on the edge of Barcaldine Forest) and operated almost nightly during the years 1980 and 1981. Critical species were identified by microscopic examination of genitalia. Some of the species listed are common in southern Britain but appear to be rare here and are included for that reason. Numbers of individuals caught in 1980 and 1981 are given in that order.

Trichiura crataegi L. (5:13), *Falcaria lacertinarum* L. (5:0), *Ochropacha duplaris* L. (6:2), *Scopula ternata* Schrank (2:0), *Orthonama vittata* Borkhausen (3:1), *Xanthorhoe munitata* Hbn. (2:2), *Entephria flavicincta* Hbn. (0:1), *E. caesiata* D. & S. (1:0), *Articlea derivata* D. & S. (0:1), *Lampropteryx suffumata* D. & S. (0:1), *Coenoteophria salicata* Hbn. (7:8), *Cidaria fulvata* Forster (3:0), *Plemyria rubiginata* D. & S. (3:2), *Thera juniperata* L. (1:0), *Colostygia olivata* D. & S. (1:0), *Hydriomena impluviata* D. & S. (0:3), *Perizoma taeniatum* Stephens (13:7), *P. albulata* D. & S. (13:2), *P. flavofasciata* Thunb. (0:1), *P. didymata* L. (0:1), *Carsia sororata* Hbn. (0:1), *Odezia atrata* L. (1:0) (common by day), *Venusia cambrica* Curtis (26:21), *Trichopteryx polycommata* D. & S. (0:2), *Acasis viretata* Hbn. (0:3) *Abraxas grossulariata* L. (0:1), *A. sylvata* Scop. (10:2), *Semiothisa notata* L. (1:0), *S. liturata* Clerck (0:4), *Plagodis pulveraria* L. (1:1), *Deuteronomus erosaria* D. & S. (2:0), *Selenia lunularia* Hbn. (2:4), *Cleora cinctaria* D. & S. (1:2), *Alcis jubata* Thunb. (62:52), *Cleorodes lichenaria* Hufn. (0:2), *Gnophos obfuscatus* D. & S. (2:1), *Dyscia fagaria* Thunb. (0:2), *Cerura vinula* L. (1:1), *Harpyia furcula* Clerck (0:1), *Pheosia tremula* Clerck (2:3), *Odontotia carmelita* Esper (10:21), *Setina irrorella* L. (0:1), *Diacrisia sannio* L. (2:3), *Spilosoma luteum* Hufn. (3:0), *Nola confusalis* H.-S. (10:12), *Euxoa tritici* L. (2:0), *Standfussiana lucerneae* L. (0:1), *Graphiphora augur* Fabr. (1:0), *Xestia rhomboidea* Esper (0:2), *X. agathina* Duponchel (6:55), *Naenia typica* L. (5:3), *Eurois occulta* L. (23:36), *Polia bombycina* Hufn. (11:24), *Lacanobia oleracea* L. (1:0), *Hadena confusa* Hufn. (1:0), *Panolis flammea* D. & S. (0:2), *Dasypolia templi* Thunb. (2:5), *Aporophyla lutulenta* D. & S. (0:3), *Lithomia solidaginis* Hbn. (0:3), *Xylena vetusta* Hbn. (11:14), *Antitrypa chi* L. (4:6), *Agrochola helvola* L. (1:1), *Parastichtis suspecta* Hbn. (9:0), *Atethmia centrargo* Haw. (0:1) *Omphaloscelis lunosa* Haw. (1:2), *Xanthia citrargo* L. (2:7), *Acrionicta tridens* D. & S. (1:0), *A. menyanthidis* Esper (0:3), *A. euphorbiae* D. & S. (0:1), *Hyppa rectilinea* Esper (2:8), *Apamea exilis* Lefebvre (4:3), *A. ophiogramma* Esper (2:0), *Amphipoea lucens* Freyer (58:732), *A. crinanensis* Burrows (15:61), *A. oclea* L. (0:1), *Celaena haworthii* Curtis (1:4), *Nonagria typhae* Thunb. (0:1), *Hoplodrina alsines* Brahm (0:1), *H. blanda* D. & S. (2:1), *Stilbia anomala* Haw. (10:10), *Eustrotia uncula* Clerck (0:1), *Bena prasinana* L. (1:0), *Autographa bractea* D. & S. (89:115), *Syngrapha interrogationis* L. (5:8), *Schrantkia costaeastrigalis* Stephens (2:2), *Hypenodes turfosalis* Wocke (2:0).

The following records from this site are also of interest:—

Apocheima pilosaria D. & S. (1) on 11 Dec 1980 (early date); *Peridroma saucia* Hbn. (1) and *Nomophila noctuella* D. & S. (1) on 30 Jan 1981 (early immigrants); *Palpita unionalis* Hbn. (1) on 30 Aug 1980 (immigrant); *Orthonama obstipata* Fabr. (1) on 2 Sept. 1980 (immigrant). — Dr. J. C. A. CRAIK, Dunstaffnage Marine Lab., P.O. Box 3, Oban, Argyll.

FURTHER NOTES ON *PHYLLONORYCTER SAPORTELLA* (DUPONCHEL) IN EAST ANGLIA. — I have already recounted (antea pp. 119-120) my chance rearing of a single adult of this rare species from South Lopham, Norfolk. Most old records were made from moths found resting on tree-trunks, so my wife and I revisited the locality on the 9th of May to look for further specimens. Within seconds we found four on the trunk of the tree from which I had taken the mine and others were not uncommon on adjacent trees. That night we rang up Dr Ian Watkinson and returned with him two days later. By then many more had emerged and Dr Watkinson counted 20 on a single trunk. Having taken photographs and a few specimens, we extended our search to the adjacent vice-counties. We managed at length to find one each in VCs 25 and 28, each about a mile from the original site, but drew blank in VC 26. The implication is that the colony, although numerically strong, is very localised.

My wife and I made our next visit on the 3rd of July to look for mines. They were easy to recognise amongst many scores of the commoner oak-feeding *Phyllonorycter*, but whereas *P. saportella* had been the most plentiful adult on the trunks in May, its mines were the least common in July. This raises once again the theory that it feeds high up on the trees. I studied the upper branches through field-glasses, but a fresh breeze was shaking the leaves and although I could see *Caloptilia* cones, I failed to spot any *Phyllonorycter* mines. This leaves the problem unresolved but I am inclined to the opinion that *P. saportella* does feed high up and that only a small proportion of its mines are accessible from the ground. It may be significant that not a single leaf was within reach on the tree where Ian Watkinson found 20 adults.

The moths began to emerge on the 14th of July and it would have been better if we had delayed our search until about that date. All the mines were on the leaf-margin. The mines of most other oak-feeding *Phyllonorycter* have a single strong central fold in the lower epidermis. This is normally absent in *P. saportella* which has instead numerous small creases which cause the leaf-edge to curl right over. I was wrong in my previous note when I said that the feeding did not extend through to the upper epidermis; it does so in varying degrees. In some cases only the extreme margin, which is folded under, is stripped of parenchyma, such mines being almost invisible from above. In others the whole upper surface of the mine is blanched. The most important character is the complete absence of frass to reinforce the walls of the cocoon; the only other British oak-feeding *Phyllonorycter* to have this character is *P. roboris* (Zeller) which has a totally different and unmistakable mine. — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

A POSSIBLE DISCOVERY OF THE FIRST GENERATION LARVA OF *ETAINIA DECENTELLA* (HERRICH-SCHAFER, 1855). [LEPIDOPTERA: NEPTICULIDAE.]. — On April 12th., 1982, whilst collecting at Mark's Grave, Horseheath, Cambridgeshire (V.C. 29), I found a sycamore tree (*Acer pseudoplatanus*) from the base of which were growing several shoots, the tallest being about 2m high. I noticed that the buds on some of these shoots were much more retarded than on others, so I picked a sample for later examination. On a more detailed study, I found that the retarded bud was always the central one of a group, i.e. the prospective flower bud.

Two buds were dissected. In the first was a hole of diameter $\frac{1}{2}$ mm (presumably the larval exit hole), and the bud had been eaten a little, though only in the most central part; there also appeared to be a mine in the bark of the twig just below the bud, but no egg could be found. There was no sign of spinning, which may indicate non-lepidopterous attack. (Hering suggests, in *The Biology of the Leaf-miners*, that the presence of silk is indicative of lepidopterous activity; it does not, however, follow that the absence of silk is indicative of non-lepidopterous activity). No larva could be found to confirm this. The second bud was similar, but signs of feeding were rather less clear. I kept the other buds in the hope of breeding something, but without success.

The life history of the first generation of *Etainia decentella* (as of all three British *Etainia*) has always been in doubt. The current position is most fully documented in a paper by Emmet and Johnson (*Ent. Rec.* 89: 257-264), where it is suggested that all three species feed in the samaras of their respective species of *Acer* in the autumn generation and in the buds in the spring generation. A particular point of similarity between *E. sericeopeza* as there described and the material described above is that the larval feeding is confined to the flower buds. In addition, the inability to find an egg could be explained by its having been on the petiole of a leaf of the previous season: naturally, this would have fallen off by the spring.

Though I cannot claim to have found *E. decentella* as a spring larva, the evidence is suggestive. I write this note principally to encourage others to do what I shall do in March/April, 1983: search *Acer* buds in the hope of finally solving the problem of the spring generation of the *Etainia* species in Britain. — P. J. JOHNSON, 10, Crossfield Road, Hampstead, London, NW3 4NS., 10.ix.1982.

FURTHER NOTES ON AN INTRODUCED "COLONY" OF THE BLACK-VEINED WHITE: *APORIA CRATAEGI* L. IN SCOTLAND. — Further to my notes on this subject in *Ent. Rec.*, 89: 282-283, it may be of interest to record the current position here of the *Aporia crataegi* "colony" which has continued to the present time, although reinforced with "new blood" from the Swiss/Italian border in 1978.

The very fine weather at the end of May and early June caused the larvae that had pupated earliest to emerge as butterflies very early, the first few on the last two days of May. At one point there were literally dozens of them flying about, and I was able to pick up a lot of paired individuals, from which I shall hope to get a very big "crop" next year.

The problem was the abrupt change in the weather which occurred here on the 6th June. So many butterflies had mated that many had laid eggs in the wild, the first batch I saw on the 2nd June. At first, I thought the very cold weather over mid-summer had killed off some of the eggs, but this proved not to be the case; however, they took six weeks, plus or minus a few days to hatch. The tree on which the first batch was laid on 2nd June (a hawthorn) subsequently became almost peppered with eggs, the last being laid on the 21st July, which hatched on the 18th August. This would be on account of the warm period we had here covering roughly the last ten days of July and the first half of August. All the earlier eggs that were kept in the summerhouse took five weeks to hatch.

I have had more time this year to study the habits of the butterflies and their interaction with the rest of the fauna. Particularly when there are a lot around, they are very often heavily persecuted by local birds, but it is always the same birds that do the predating; this year a blackbird, a song-thrush and a great-tit. A pair of spotted flycatchers left them alone. The butterflies have a curious habit of alighting in groups for the night, and are often very conspicuous, particularly the males; the females on the other hand seem to become semi-transparent after a short time flying, and soon look markedly different from the other Pierids. Both sexes are strongly attracted to Rhododendron and Rose-bay Willowherb. In the past, I was convinced the males mated only once, but I have evidence that at least two males mated twice. The foodplant mostly selected is hawthorn (*Crataegus monogyna*) followed by the apple trees in my orchard. One or two batches have been laid on a group of trees I cannot classify; these grow wild from fallen fruit and produce somewhat tasteless plums like damsons but the wrong colour. This year I found a batch of eggs for the first time on Mountain Ash (*Sorbus aucuparia*). These insects will eat things I suspect the eggs are never laid on, e.g. quince (*Cydonia*) and even the evergreen *Prunus lusitanica*.

Although last winter's experiment proved that the insect can successfully come through the Scottish winter, at least to the extent of about 65% survival rate of those tried, the experiment involved protection by a strawberry net to keep out insectivorous birds. Incidentally, a larva given to Dr. Shaw of the Royal Scottish Museum parasitised by *Apanteles glomeratus* proved to be the only one so affected, with the remaining 38 all producing butterflies. — R. ELLIOTT, "Burbank", North Road, Saline Fife, 20.viii.82.

A SIGHTING OF *AGRION VIRGO* (LINN.) (ODONATA: AGRIIDAE) IN CENTRAL LONDON. — On the morning of the 4th of September 1982 a solitary male of this species was seen flying south along Queensway W2, towards Kensington Gardens (Nat. Grid Ref. TQ259807). The specimen concerned must have strayed some distance from its breeding site, as the larvae are usually found in swift flowing gravel streams. To my knowledge no such habitat exists in this area of London. — A. P. FOSTER, c/o Nature Conservancy Council, 19-20 Belgrave Square, London, SW1X 8PY.

Obituary

ROBERT LARGEN

Robert Largen died of a heart attack at his home Yew Tree Cottage, Wiston Lane, Wiston, Steyning, Sussex. He was born on the 7th December 1945 and died the 6th August 1982, and so was only 36 years of age at the time of his death.

Robert was a cheerful and unassuming companion, who undertook his collecting in an unhurried manner and never lost patience with the hunt, whether it be hour after hour of searching for larvae at Portland or long hours of night sweeping on the Surrey heaths. A keen all round naturalist, he seemed to have the perfect occupation with the countryside and its wildlife around him, for his work was that of a gamekeeper on Wiston Estate. Although an accomplished taxidermist as his collection of mounted birds show, perhaps his greatest achievement was the superb two tier 34 drawer mahogany insect cabinet, built entirely himself and completed only shortly before his death. His collection of British lepidoptera will be retained as a fitting memorial to him at the cottage where he lived, and it was from it that we exhibited at the A.E.S. and B.E.N.H.S. Exhibitions in October 1982, a drawer containing some of his more interesting specimens.

To all who had the pleasure of his company, Robert will be greatly missed and, speaking for ourselves, we shall find it hard to enjoy moth hunting as much without him. Our sympathy goes out to his widow Daphne, and to his many friends.

S. CHURCH, A. K. BATTEN, S. ODELL and J. PLATTS

Current Literature

Benjamin Wilkes the British Aurelian: Twelve New Designs of English Butterflies and Directions for making a Collection with an Essay by R. S. Wilkinson. Folio (31cm. x 34cm.), 11pp. on 6 leaves, 14 facsimile plates in card folder. E. W. Classey Ltd., Park Road, Faringdon, Oxon SN7 7DR. 1982. Price £20 post free.

We have much pleasure in calling attention to *Classica Entomologica* No. 3, the most recent publication to be issued by the firm of E. W. Classey, which fully sustains the reputation of the four others so far published in this series, all of which have been reviewed in this journal (see *Ent. Rec.*, 82: 64, 91: 223, 332, 93: 80). *Classica Entomologica*, which was started in 1969, consists of a series of facsimile reprints of rare entomological items with biblio-

graphical and/or biographical notes of special appeal to historians of entomology and those interested in entomological bibliography. Six items in the series are scheduled, of which five, including the present one, have already appeared. This latest production concerns two of the rarest of all entomological publications, whose author Benjamin Wilkes flourished some 250 years ago.

Little is known about the early life of Benjamin Wilkes. A. A. Lisney (*A Bibliography of British Lepidoptera*, 121) says he was born towards the close of the seventeenth century, that he was a painter in oils and became interested in entomology following an invitation by a friend to a meeting of the Aurelian Society, of which he became a member, and then proceeded to form his own collection of English lepidoptera. Encouraged by Joseph Dandridge, one of the earliest collectors of natural history specimens and a contemporary of Petiver and Ray, Wilkes began publication of notes on native lepidoptera which he had compiled over a period of ten years, illustrating these with his drawings of the various stages in the life histories of as many species as possible. As far as is known, his only published works are the *Twelve New Designs of English Butterflies, English Moths and Butterflies* and a broadside sheet *Directions for making a Collection*. Four issues (or editions) of the first of the foregoing were published, and it is the facsimile reproduction of the fourth of these as well as the facsimile of the *Directions* that are the subject of this review.

The work consists of an attractive title page and an interesting "Publisher's Preface" by E. W. Classey with background information. Then follows a masterly account in the form of an essay, by that great authority, Dr. R. S. Wilkinson (Pp. 4-11) on the life and times of Benjamin Wilkes as under: Wilkes' apprenticeship in entomology, the 'Twelve new Designs', the 'Collecting Directions' and the English Moths and Butterflies, the whole being furnished with 69 detailed numerical annotations gathered together at the end. Next comes the facsimile of *Directions for making a Collection* (1742), of which only one example is known to have survived being that in the British Museum (Natural History), followed by the facsimile of the exceedingly rare Carrington Bowles' edition of the *Twelve New Designs* dating from the late 1760s, of which only four copies are known to exist, and comprising an elegant decorated title page and 12 engraved plates.¹

Comparison with the originals of both works, reveals that in the reproduction a number of the figures is less well defined, and in the *Directions* some words are blurred. However, except for these minor failings this is a handsome production, with the whole edition printed on a high quality cream-coloured paper, contained in a blue card folder with decorated cover and limited to 475 numbered copies. — J. M. C.-H.

¹ A curious fact regarding the Carrington Bowles' edition and one that appears not to have been noticed before, concerns the title page and the number of lepidoptera figured. It is there stated that 'near 300 different' species are illustrated. Yet the truth is the number of species shown amounts to no more than 82!



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CONTENTS

Successful Rearing of the Dotted Rustic: <i>Rhyacia simulans</i> Hufn. (Lep.: Noctuidae). P. CONVEY	207
Mate Location Strategies in the Wall Brown Butterfly, <i>Lasiommata megera</i> L. (Lep.: Satyridae): Wait or Seek? Dr. R. L. H. DENNIS	209
The Kentish Glory: <i>Endromis versicolora</i> L. at Rannoch E. C. PELHAM-CLINTON	215
<i>Vanessa indica</i> Herbst in Warwickshire: New to Britain. K. TURNER.	217
Scottish Microlepidoptera Notes for 1981. Dr. K. P. BLAND	219
Further Records of Phoridae (Diptera) from Cocoons of Cimbicidae (Hymenoptera). A. D. LISTON	221
Three New Lycaenid Butterflies from the South Western Cape Province. C. G. C. DICKSON	222
Fluctuations in Abundance of Coccinellidae. Dr. D. F. OWEN	225
Further Notable Diptera from Windsor Forest. A. A. ALLEN	229
The Northern Rustic: <i>Standfussiana lucerneae</i> L. (Lep.: Noctuidae) in Lancashire. E. G. HANCOCK	233
Treasurer's Notice	236
Notes and Observations:	
<i>Danaus chrysippus</i> L. in Tunisia. J. F. BURTON	208
The Pimpinel Pug: <i>Eupithecia pimpinellata</i> Hbn. in Warwickshire R. J. THOMAS	216
Survival of <i>Limenitis reducta</i> Stgr. in Yorkshire. R. J. D. TILLEY	216
Melanic <i>Lobophora halterata</i> Hufn.: Seraphim. B. K. WEST	218
The Feathered Beauty: <i>Peribatodes secundaria</i> D. & S. in Sussex. R. G. CHATELAIN	218
Early Appearance of the Mottled Umber. J. N. GREATOREX-DAVIES	218
<i>Dioryctria schuetzeella</i> Fuchs in June 1982. M. W. F. TWEEDIE	220
Eggs Laid by a Decapitated Moth. Miss B. A. KNELER	221
A. H. Haworth's Entomological "Pictures". Dr. R. S. WILKINSON	224
<i>Carpophilus marginellus</i> Motsch. (Col., Nitidulinae) out-of-doors in Suffolk. D. R. NASH	228
Margaret Fountaine: the Fate of Many of her Books and Some of her Notes	234
The Silver-spotted Skipper: <i>Hesperia comma</i> L., a New Locality near Eastbourne. M. PARSONS	235
A New Foodplant of <i>Syntarucus pithous</i> L. J. G. COUTSIS	235
Flight Time of the Ringlet: <i>Aphantopus hyperantus</i> L. in Scotland. P. K. KINNEAR	236
An Italian Butterfly Poster. Canon P. HAWKER	237
The Convolvulus Hawkmoth and Clouded Yellow in Devon in 1982. H. L. O'HEFFERNAN	237
The Clouded Yellow, Autumn 1982. A. J. BALDWIN	237
<i>Rhyacia simulans</i> Hufn.: Dotted Rustic in Lincs. M. TOWNSEND	237
The Lunar Thorn in East Sussex. M. PARSONS	238
<i>Bucculatrix cidarella</i> Z. on <i>Myrica gale</i> in England. A. M. EMMET	238
The High Brown Fritillary in S. Cumbria. M. J. Y. FOLEY	238
The Speckled Wood Feeding on Damaged Apple. B. K. WEST	238
<i>Trichoplusia ni</i> Hbn. New to Warwickshire. D. C. G. BROWN	239
Two-year Life-cycle of <i>Coleophora hemerobiella</i> Scop. A. M. EMMET	239
Lincolnshire Butterflies. M. TOWNSEND	240
The Marsh Fritillary in Cumbria. M. J. Y. FOLEY	240
Decline of the Duke of Burgundy. M. R. OATES	240
<i>Nymphalis antiopa</i> L. at Sea. J. G. COUTSIS	241
<i>Yponomeuta evonymella</i> L. in Southern England. A. M. EMMET	241
Disappearance of Privet Hawkmoth from N. W. Kent. B. K. WEST	242
Some Less Common Lepidoptera taken at Barcaldine, Argyll, in 1980 and 1981. Dr. J. C. A. CRAIK	243
Further Notes on <i>Phyllonorycter saportella</i> Dup. A. M. EMMET	244
A Possible Discovery of the First Generation Larva of <i>Etainia decentella</i> H.-S. (Lep., Nepticulidae). P. J. JOHNSON	245
Further Notes on an Introduced "Colony" of the Black-veined White: <i>Aporia crataegi</i> L. in Scotland. R. ELLIOTT	246
<i>Agriion virgo</i> L. (Odonata: Agridae) in Central London. A. P. FOSTER	246
Obituary: Robert Largen	247
Current Literature	247

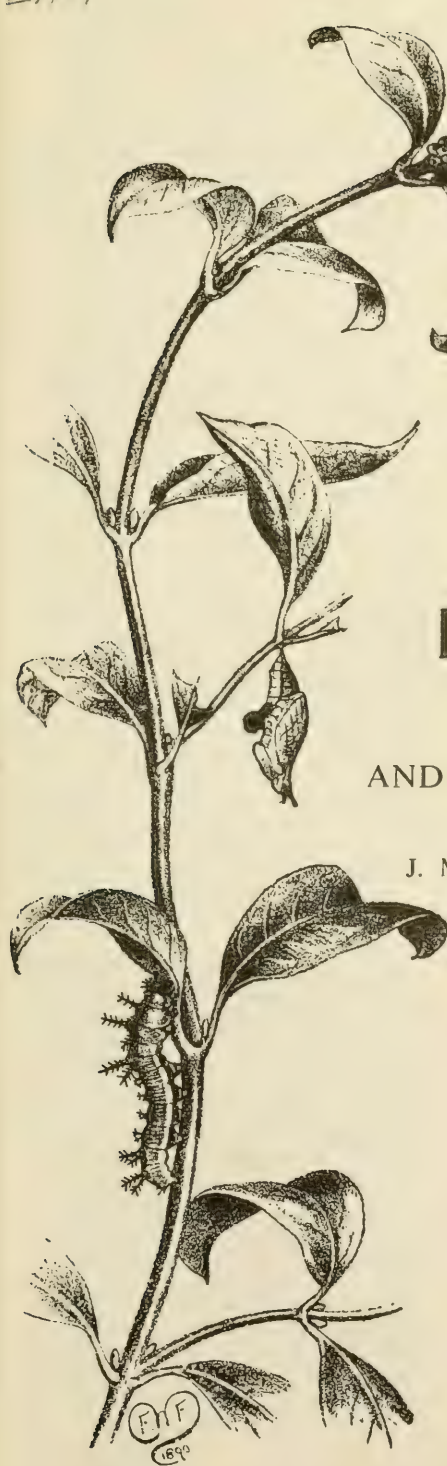
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Vol. 95
1983

CONTENTS 1983

- Acherontia atropos* L. in Bury, Lancs. 22 October 1982. The Death's Head Hawkmoth. *E. G. Hancock*, 86
- Acherontia atropos* L. in Northamptonshire. The Death's Head Hawkmoth *D. C. G. Brown*, 39
- Acleris hastiana* L. Bred from *Salix capraea* in Surrey, 132
- Aglais urticae* L. ab. *nigra* Tutt *P. B. Darch*, 180
- Agrius convolvulæ* L. and other Migrants in S. Westmorland in 1982 *J. Briggs*, 39
- Agrodiaetus fabressii* Oberthür (Lep.: Lycaenidae); Oberthür's Anomalous Blue. *J. M. Chalmers-Hunt*, 23
- Agrodiaetus iphigenia nonacriensis* Brown. The Female of *J. G. Coutsis* 196
- Agromyzid Flies (Diptera: Agromyzidae). Further Records of *K. P. Bland*, 77
- Agonum gracilipes* (Duft.) (Col.: Carabidae) together with a Reappraisal of its British Status. Notes Concerning the Habitat of, and Other Coleoptera associated with an example of *D. R. Nash*, 205
- Aloeides* Huebner. A New Lycaenid Butterfly from Lesotho, of the Genus *E. L. Pringle*, 173
- Anasimyia* and *Parhelophilus* spp. (Dipt.: Syrphidae) in West Kent, Bucks. etc. Notes on Certain *A. A. Allen*, 72
- Andricus quercuscalis* Burgsdorf (Hymenoptera; Cynipidae) in East Kent V.C.15. *L. Clemons*, 86 123
- Angle Shades in January. The *J. M. Chalmers-Hunt*, 106
- Apatele euphorbiae* F.: One Night of Abundance *B. K. West*, 119
- Apium nodiflorum*: A Previously unrecognized Foodplant of *Depressaria ultimella* Stainton. *R. J. Heckford*, 229
- Aporia crataegi* L.: Black-veined White. A Modern Review of the Demise of *C. Pratt*, 45, 161, 232
- Apotomis sauciana sauciana* Frolich (Lep.: Tortricidae) in Kent. *N. F. Heal*, 182
- "Aprilina". The name *J. K. C. Kemp*, 204
- Archicaris notha* Hbn.: Light Orange Underwing, Three Years in Pupal Stage. *J. V. Banner*, 231
- Bembecia chrysidiformis* Esper. Concerning the Fiery Clearwing; *J. M. Chalmers-Hunt*, 170
- Bembecia chrysidiformis* Esp. (Fiery Clearwing) in Dorset. An Old Unpublished Record. *A. A. Allen*, 76
- Bembecia chrysidiformis* Esper: (Lep.: Sesiidae) *S. N. A. Jacobs*, 169
- Book Talk Six. *J. M. Chalmers-Hunt*, 247
- Breeding British Moths (Macrolepidoptera). A Check List of *C. A. Rutherford*, 58
- British Butterflies in 1982. A Review of *C. J. Luckens*, 175
- Buckinghamshire with Notes on Other Lepidoptera of Interest. A New County Record for *M. Hadley*, 57
- Buddleia davidii*. Lepidoptera Larvae Feeding on the Leaves and Flowers of *D. F. Owen*, 20
- Butterflies and Hawkmoths of Kuwait. *W. Al. Houty*, 202
- Butterflies at Light and an *Agrius convolvuli*. *R. G. Chatelain*, 248
- Butterfly Behaviour — *celtis*, *crataegi*, *spini* *J. Feltwell*, 169
- Calameuta pallipes* (Klug) (Symphita: Cephidae) A Species and a Family of Sawfly New to Ireland. *J. P. O'Connor* and *M. A. O'Connor*, 111
- Calotephria salicata* Hbn.: Striped Twin-spot Carpet again in Surrey. *R. F. Bretherton*, 211
- Carabus* spp. (Col.) Mostly in South-Eastern England. Notes on the Incidence of Certain *A. A. Allen*, 80
- Catocala nymphagoga* Esper and *Herminia zelleralis* Wocke, two Species of Noctuidae New to Britain. *I. J. L. Tillotson*, 133
- Celastrina argiolus* L. in 1982. *A. J. Baldwin*
- Central Spain in 1982, Including a record of Northward Migration. Butterflies in *J. F. Burton* and *D. F. Owen*, 242
- Checklist of Breeding British Moths (Macrolepidoptera) *C. I. Rutherford* 157
- Cheesman. Memories of Evelyn *J. F. Burton*, 132
- Chlorophorus pilosus* Forst. var. *glabromaculatus* Gze. (Col.: Cerambycidae) from an Imported Cheese Board. *D. R. Nash*, 195

- Chloroclystis debiliata* Hbn.; Bilberry Pug in Kent. *N. F. Heal*, 85
- Chrysolina* spp. (Col.: Chrysomelidae). A Note on Foodplants of Two *A. A. Allen*, 152
- Clouded Yellow and Duke of Burgundy Fritillaries in Cumbria. *D. C. Hockin*, 96
- Coccinellidae. Fluctuation in Abundance of *D. F. Owne*, 29
- Coccinella undecimpunctata* L. (Col.: Coccinellidae) in Britain. Autumnal aggregation of *D. C. Nash*, 201
- Coleophora ramosella* Zeller in Kent. *N. F. Heal*, 84
- Coleophora salicorniae* Wocke. Further Notes upon the Foodplant of *N. F. Heal*, 64
- Coleophoridae (Lep.) in North Wales. Records of *H. N. Michaelis*, 217
- Colias croceus* Geoff. near Killarney in 1982. The Clouded Yellow: *P. B. Sankey-Barker*, 36
- Colias crocea* in 1983. *J. M. Chalmers-Hunt*, 248
- Commophila aeneana* Hbn. (Lep.: Cochyliidae). *K. F. Webb*, 215
- Conistra rubiginea* D. & S. in the wild. Larva of the Dotted Chestnut *A. J. Pickles*, 231
- Conocephalus dorsalis* (Latreille) (Saltatoria: Tettagoniidae) in V.C.34. *R. H. Poulding*, 83
- Cordulia aenea* L. (Odonata: Corduliidae). Mortal Combat in *P. R. Marren*, 18
- Crocosema plebjana* Zell. in Kent. *P. J. Jewess*, 117
- Crombrughia distans* (Zeller) (Lepidoptera: Pterophoridae). The Early Stages of *A. E. Ennet*, 15
- Cupido minimus* Fuess. in Cumbria. The Small Blue *M. J. Y. Foley*, 249
- Danaus chrysippus* L. in Tunisia in 1983. *L. F. Cassar*, 249
- Death of a Butterfly. The *E. C. L. Simson*, 119
- Death's Head Hawk: *Acherontia atropos* L. in 1983. The *F. H. N. Smith*, 222
- Dewick's Plusia and Other Migrants in Norfolk in 1982. *T. N. D. Peet*, 23
- Diarsia mendica* F.: Small Squarespot in November *J. Briggs*, 84
- Diptera from Windsor Forest. Further Notable *A. A. Allen*, 24
- Doractoma serra* Panz. (Col.: Anobiidae) and a Corection. A Second Norfolk Record of *A. A. Allen*, 248
- Dorcatoma chrysomelina* Stn. and *D. flavicornis* F. (Col.: Anobiidae) in Suburban Kent. *A. A. Allen*, 115
- Elachista littorcola* le Marchand, 1938 (Lep.: Elachistidae) New to the British Isles. *E. H. Wild*, 65
- Elidona agricola* (Herbst) (Col.: Tenebrionidae) in V.C.17. A Second Recent Locality for *A. A. Allen*, 222
- Ethmia bipunctella* F. in Hampshire. *E. H. Wild*, 231
- Epiphyas postvittana* Walk. New to Kent and the London Area *A. A. Allen*, 120
- Eristalis tenax* L. (Diptera: Syrphidae) in January *C. W. Plant*, 115
- Esperia sulphurella* (Fabricius) (Lep.: Oecophoridae) pupae in January. *C. W. Plant*, 124
- Euchromius ocella* Haworth in Wiltshire. *G. Smith*, 33
- Euproctis chrysorrhoea* and Scarce Black Arches: *Nola aerugula* Hbn. in S. E. Yorks. in 1982. The Brown Tail *P. Q. Winter*, 118
- Euproctis chrysorrhoea* L. in London. *L. Christie*, 224
- Eupsilia transversa* Hufn. feeding in January. The Satellite *J. Platts*, 123
- European Congress of Entomology. The *W. de Prins*, 87
- Europe in 1980. Southern *W. J. Tennant*, 97
- Eurynebria*. In Search of *D. R. Copestake*, 95
- Euxoa cursoria* Hufn. in Mid Kent. *P. J. Jewess*, 119
- Food Fads of Lepidopterous Larvae. *P. J. L. Roche*, 42
- Foresters. A Further Note on Colour Change in the *M. Hadley*, 37
- Ghar Dalam (Cave), Malta. Observations on the Lepidoptera of *G. Zammit-Maempel*, 73
- Gnathothlibus* (Lepidoptera: Sphingidae (Macroglossinae)) from Sulawesi. A Striking New Species of *A. H. Hayes*, 19

- Gonodontis bidentata* Clerck. Some Observations of Lichen-Marked larvae of the Scalloped Hazel *M. E. N. Majerus*, 21
- Gronopus inaequalis* Boheman (Col.: Curculionidae) A Weevil New to Britain. *L. Clemons*, 213
- Guernsey, Channel Islands in 1982. Lepidoptera in *T. N. D. Peet*, 36
- Gymnetron plantaginis* Epp. (Col. Curculionidae), *A. A. Allen*, 135
- Hippotion celerio* L.: Silver-striped Hawkmoth in Scotland *A. Buckham*, 38
- Hummingbird Hawkmoth in 1983. *M. R. Hall*, 224
- Hydrelia sylvata* D. & S.: *testacea* Don. (Lep.: Geometridae) — Larval Foodplant in Mid Kent. *B. K. West*, 250
- Hyloicus pinastri* L. in Warwickshire. The Pine Hawk *A. F. J. Gardner*, 184
- Hymenoptera in Late 1982. *T. G. Howarth*, 103
- Hypena obsitalis* Hbn. in 1983. The Bloxworth Snout *M. W. F. Tweedie*, 126
- Hypera arator* Linnaeus (Col.: Curculionidae) in Association with Barley. *R. W. J. Read*, 168
- Immigration of Lepidoptera to the British Isles in 1982. The *R. F. Bretherton* and *J. M. Chalmers-Hunt*, 89, 141
- Inachis io* L. Courtship and Pairing in *B. R. Baker*, 180
- Lacanobia biren* Goeze: Glaucous Shears: an Unusual Record *R. C. Dyson*, 210
- Laricobius erichsoni* Rosenhauer (Col.: Derodontidae). Spring Emergence of *D. R. Nash*, 207
- Lasiommata megera* (L.) (Lepidoptera: Satyridae), Wait or Seek? Mate Location Strategies in the Wall Butterfly *R. L. H. Dennis*, 7
- Ledra aurita* L. (Hem.: Ledridae) Confirmed from Wiltshire. *D. R. Nash*, 204
- Leptura scutellata* Fab. (Col.: Cerambycidae) on the Surrey/Berks. Border *D. Prance*, 122
- (*Lipoptena cervi* (L.)) from Ireland. A Record of a Human-biting Deer Fly. *J. P. O'Connor*, 32
- Lithophane leautieri* Boisd. A Further Spread Eastwards *H. E. Chipperfield*, 52
- Lozotaeniodes formosanus* Geyer and *Palpita unionalis* Hbn. in Warwickshire. *C. Wale*, 123
- Luffia lapidella* Goeze (Lep.: Psychidae) in Cornwall. *F. H. N. Smith*, 53
- Lycaenid Butterflies from the South-Western Cape Province. Three New *C. G. C. Dickson*, 1
- Macroglossum stellatarium* L., An Early *R. C. Dyson*, 122
- Mallota cimbiciformis* Fall. (Dipt.: Syrphidae) A Second Kent Record. *A. A. Allen*, 82
- Marbled Grey: *Cryphia raptacula* Hbn. in Kent. The *P. H. Sterling*, 231
- Megasella* (Dipt.: Phoridae) New to Britain from Hayley Wood, Cambridgeshire. *R. H. L. Disney*, 181
- Mellicta athalia* Rott. in 1982. Early Appearance of the Heath Fritillary *J. Platts*, 121
- Mellicta deione berisalii* Ruhl. at Martigny. *L. J. Evans*, 124
- Orthosia stabilis* D. & S.: Common Quaker in Surrey. Early Appearance of *T. G. Winter*, 125
- Palatability of Butterflies. On the *T. B. Larsen*, 66
- Pammene agnotana* Rebel (Lep.: Tortricidae). A Second Record in Britain of *R. Fairclough*, 83
- Pammene obscurana* Stephens (Lep.: Tortricidae) in Essex *J. M. Chalmers-Hunt*, 169
- Panagaeus bipustulatus* Fab. (Col.) in Glamorgan. *D. R. Copestake*, 115
- Papilio machaon* L. in Lancashire. The Swallowtail *E. G. Hancock*, 83
- Parasitic Hymenoptera of *Pieris rapae* (L.) and *Pieris brassicae* (L.). The Timing of emergence of *S. C. Littlewood*, 104
- Parocystola acroxantha* Meyrick (Lep.: Oecophoridae) in Somerset. *G. H. Youden*, 103
- Parornix scoticella* Stainton. (Lep.: Gracilariidae) in Kent *N. F. Heal*, 212
- Pelosia muscerda* Hufn.: Dotted Footman in Kent. *G. A. Collins*, 222
- Phalera bucephala* L. (Bufftip) on Rose. Larvae of *A. A. Allen*, 106
- Philudoria potatoria* L. in January. *T. Newnham*, 121

- Phlogophora meticulosa* L. The Inheritance of two Reddish Forms of the Angle Shades: *M. E. N. Majuers*, 40
- Phylonorycter roboris* Zeller in Surrey. *N. F. Heal*, 72
- Pieris rapae* L. and an aberration. Observations on the Small White: *J. H. Payne*, 121
- Platyptilia calodactyla* D. & S. (Lep.: Pterophoridae). Foodplants of *A. M. Emmet*, 168
- Polydesmus angustus* Latzel (Diplopda: Polydesmidae) Feeding on Carrion. *Y. Z. Erzinclioglu* and *J. Richardson*, 118
- Polypogon Strigilata* L. (Lep.: Noctuidae) Some Notes on *B. Elliott*, 238
- Precis octavia* Cramer in Natal, S. Africa. Concerning Observations on *L. McLeod*, 211
- Precis octavia* Cram. (Lep.: Nymphalidae): Emergence of Wet and Dry Season Forms from Collected Larvae. *B. K. West*, 6
- Purple Marbled: *Eublemma ostrina* Hbn. at Portland. The *A. J. Pickles*, 224
- Pyrenees Orientales. Notes on some Spring Heterocera from the *B. Goater*, 68
- Queen of Spain Fritillary Reared from Eggs. The *G. E. Hyde*, 180
- Recording Lepidoptera in the Cotswolds during 1982. *M. N. McCrea*, 225
- Red Admiral and Speckled Wood over fallen Fruit. Combat between *P. B. Sankey-Barker*, 126
- Red Admiral early in 1983. The *E. C. M. Haes*, 112
- Red Admiral early in 1983. The *A. Archer-Lock*, 112
- Red Admirals Flying at Low Temperatures in 1982. *G. Smith*, 38
- Red Data Book-Insects *J. Heath*, 57
- Rheumaptera hastata* L. in Sussex. The Argent and Sable *D. Dey*, 231
- Rhyacia simulans* Hufnagel: Dotted Rustic in Hampshire 1982. Further Record of *J. W. Phillips*, 87
- Phizopagus* Species (Col.: Rhyzophagidae). New Vice County Records of *J. Cooter*, 121
- Rhyacia simulans* Hufn. and *Monochroa palustrella* Douglas taken at Rye Harbour, Sussex. *M. W. F. Tweedie*, 67
- Rhyacia simulans* Hufn. in Lincolnshire. The Dotted Rustic: *R. E. M. Pilcher*, 87
- Rose Hips. Moths attracted to *B. K. West*, 116
- Saturnia pavonia* (L.) in association with *Potentilla palustris* (L.) Scop. in West Cumbria. *R. W. J. Read*, 117
- Sawflies (Hym.: Symphyta) Abnormal Morphology and Variation in *A. D. Liston*, 208
- Scarce Merveille du Jour: *Moma alpium* Osbeck in Sussex. The *D. Dey*, 215
- Selenia dentaria* F. in Warwickshire in 1982. A Melanic Early Thorn. *M. F. Halsey*, 87
- Setina irrorella* L. in South Hampshire *A. J. Pickles*, 86
- Sphinx ligustri* L. in Vice County 16 (West Kent) *W. G. St. John*, 116
- (*Strymonidia w-album* Knoch) A National Survey. The White Letter Hairstreak *C. Peachey*, 139
- Strymonidia w-album* Knoch in Co. Durham. The White Letter Hairstreak *T. C. Dunn*, 67
- Tachydromia terricola* Zett. (Dipt.: Empididae) New to Britain. *A. A. Allen*, 223
- Tanzania (Lepidoptera: Lycaenidae). Some New Butterflies from *J. Kielland*, 107
- Tebenna bjerckandrella* Thunberg (Lep.: Glyphipterigidae) in Ireland *K. G. M. Bond*, 28
- Teliodes vulgella* Hbn. on Juniper. *P. Sokoloff*, 116
- Tettigonia viridissima* L. and Speckled Bush Cricket: *Leptophyes punctatissima* (Bosc.) in Pembrokeshire. The Great Green Bush Cricket: *J. F. Burton*, 123
- Thaumetopoea processionea* (Linn.) (The Oak Processionary Moth): The Imago recorded in Britain together with other rare Migrants from Cornwall. *A. P. Foster*, 216
- Thera juniperata* L.: Juniper Carpet, in East Sussex. *M. Parsons*, 64
- Tischeria angusticoella* Duponchel in Kent. *N. F. Heal*, 116
- Trox scabulosus* L. (Col.) A New County Record in Glamorgan. *D. R. Copestake*, 157
- Ultraaricia anteros* Fryer (Lep.: Lycaenidae) from Greece. Notes on *J. G. Coutsis*, 200

Vanessa atalanta L. in November in S. E. Devon. The Red Admiral T. G. Howarth, 106

Vanessa atalanta L. in 1982. Notes on R. D. G. Barrington, 122

Vanessa atalanta L. Reverse Migration by Red Admirals A. Harmer, 39

Vapourer Moth. *Buddleia davidii* and *Lycesteria formosa* as Larval Food-plants of the B. K. West, 122

Vestal in three Consecutive Years in Croydon. The Appearance of the K. G. W. Evans, 103

West Indian Butterflies. Notes Concerning Certain J. G. Coutsis, 113

Westwood. Oxford University v. The Smithsonian Institute. The Papers of. J. O. R. S. Wilkinson, 166

White Spot: *Hadena albimacula* Borkh. in Surrey. The G. A. Collins, 222

Willoughby Gardner Library: A Collection of early Printed Books on Natural History by J. R. Kenyon. The J. M. Chalmers-Hunt, 241

Xestia castanea Esp.: Grey Rustic in Kent. J. Platts, 224

Xylocampa areola Esper (Lep.: Noctuidae) pupa. Possible Defence Reaction of C. W. Plant, 186

Yorkshire Lepidoptera in 1982. Notable S. M. Jackson, 84

Zerinthia rumina L.: a Second Brood and Other Interesting Butterflies in Spain D. and S. Howell, 120

Zygaena trifolii Esper ssp. *palustrella* Verity in East Kent in 1982. The Five Spot Burnet. M. A. Enfield, 85

CURRENT LITERATURE:

Butterflies and Moths of Britain and Europe, by David Carter, 42

A Complete Guide to British Butterflies, by Margaret Brooks, 43

The Biology of the Coleoptera by Dr. R. A. Crowson, 44

A Key to the Families of British Diptera, by D. M. Unwin, 127

Insect Neurohormones by M. Raabe, 127

Large White Butterfly, The Biology, Biochemistry and Physiology of *Pieris brassicae* (Linnaeus), by J. Feltwell, 128

The Buprestidae (Coleoptera) of Fennoscandia by S. Bily, 134

The Butterflies of Northern Europe, by Bjorn Dal, 140

The Butterflies of Scandinavia, by H. J. Henriksen, 171

The Insects, by R. F. Chapman, 171

Tabellen en Verspreidings Atlas van de Nederlandse Microlepidoptera, by J. H. Kuchlein, F. Leffef & R. F. Kleinpaste, 250

Study of Stoneflies, Mayflies and Caddis Flies, by T. T. Macan, 251

Annales Historico-Naturales Musei Nationali Hungarici, and Acta Zoologica Academiae Scientiarum Hungarici, 251

Butterflies of the Yemen Arab Republic by T. B. Larsen, with a Review of Species in the *Charaxes viola* Group from Arabia and East Africa, by Dr. A. H. B. Rydon, 252

OBITUARY NOTICES:

Major-General C. G. Lipscomb, 34
Douglas Cottrill, 88
T. D. Fearnough, 114

Agassiz, D. J. L., 187

Al Houty, W., 202

Allen, A. A., 24, 38, 72, 76, 80, 82, 85, 106, 115, 120, 132, 135, 152, 154, 222, 223, 248

Archer-Lock, A., 112, 129

Baker, B. R., 180

Baldwin, D. G., 122

Banner, J. V., 231

Barrington, R. D. G., 122

Bland, K. P., 77, 183

Bond, K. G. M., 28

Briggs, J., 39, 84

Bretherton, R. F., 89, 141, 211

Brown, D. C. G., 39

Buckham, A., 38

Burton, J. F., 123, 132, 242

Cassar, L. F., 249

Chalmers-Hunt, J. M., 23, 89, 106, 114, 141, 169, 170, 241, 247, 248

Chatelain, R. G., 248

Chipperfield, H. E., 52

Christie, J., 224

Clemons, L., 86, 123, 213

Collins, G. A., 222

Cooter, J., 121, 134, 185

Copestake, D. R., 95, 115, 156

Coutsis, J. G., 113, 196, 200

- Darch, P. B., 180
 Denning, R. C., 155
 Dennis, R. L., 7
 De Prins, W., 87
 Dey, D., 215, 231
 Dickson, C. G. C., 1
 Disney, R. H. L., 181
 Duncan, Sir A. B., 123
 Dunn, T. C., 67
 Dyson, R. C., 122, 210

 Elliott, B., 238
 Emmet, A. M., 15, 168
 Enfield, M. A., 85
 Erzincoglu, Y. Z., 118
 Evans, K. G. W., 103
 Evans, L. J., 124

 Fairclough, R., 83
 Feltwell, J., 169
 Foley, M. J. Y., 249
 Foster, A. P., 216

 Gardener, A. F. J., 184, 199
 Goater, B., 68
 Gurrea, P., 153

 Hadley, M., 37, 57
 Haes, E. C. M., 112
 Hall, M. R., 224
 Halsey, M. F., 87
 Hancock, E. G., 83, 86
 Harmer, A., 39
 Hayes, A. H., 19
 Heal, N. F., 64, 72, 84, 85, 116, 182, 212
 Heath, J., 37
 Heckford, R. J., 229
 Hockin, D. C., 96
 Howarth, T. G., 103, 106
 Howell, D., 120
 Howell, S., 120
 Hyde, G. E., 180

 Jackson, S. M., 84
 Jacobs, S. N. A., 169
 Jewess, P. J., 117, 119

 Kemp, J. K. C., 204
 Kielland, J., 107

 Larsen, T. B., 66
 Liston, A. D., 208
 Littlewood, S. C., 104
 Luckens, C. J., 11, 140, 171, 175

 Majerus, M. E. N., 21, 40
 Marren, P. R., 18
 Martin, J., 153
 McCrea, M. N., 225
 McLeod, L., 211
 Michaelis, H. N., 217

 Newnham, T., 121
 Nash, D. R., 195, 201, 204, 205, 207

 O'Connor, J. P., 32, 111
 O'Connor, M. A., 111
 Owen, D. F., 20, 29, 242

 Parsons, M., 64
 Payne, J. H., 121
 Peachey, C., 139
 Peet, T. N. D., 23, 36
 Pelham-Clinton, E. C., 212
 Phillips, J. W., 87
 Pickles, A. J., 86, 224, 231
 Pilcher, R. E. M., 87
 Plant, C. W., 115, 124, 186
 Platts, J., 121, 123, 125, 224
 Poulding, P. H., 83
 Prance, D., 122
 Pratt, C., 45, 161, 232
 Pringle, E. L., 173

 Read, R. W. J., 117, 167, 168
 Richardson, J., 118
 Roche, P. J. L., 42
 Rutherford, C. I., 58, 157

 Sankey-Barker, P. B., 36, 126
 Simson, E. C. L., 119
 Smith, F. H. N., 53, 222
 Smith, G., 38
 Smith, R., 33
 Sokoloff, P., 116
 St. John, W. G., 116
 Sterling, P. H., 231

 Tennant, W. J., 97
 Tillotson, I. J. L., 133
 Tweedie, M. W. F., 67, 126

 Wales, C., 123
 Webb, K. F., 204, 215
 West, B. K., 6, 116, 119, 122, 250
 Wild, E. H., 65, 231
 Wilkinson, R. S., 166
 Wilson, D. E., 117
 Winter, P. Q., 118
 Winter, T. G., 125

 Youden, G. H., 103
 Zammit-Maempel, G., 73

SPECIAL INDEX

COMPILED BY S. N. A. JACOBS (LEPIDOPTERA)
AND A. A. ALLEN (OTHER ORDERS)

For British Lepidoptera this Index follows the nomenclature of *A Check List of British Insects*, Part 2 by Kloet & Hincks (1972), brought up-to-date to correspond with the *Label List of British Butterflies & Moths* by Bradley & Fletcher (1979). Where a contributor has used a synonym, a cross reference is given. Any newly described taxa (species, genera, etc.) are distinguished by bold (Times) type, and taxa new to British or newly recognised as British by an asterisk. Moreover, with *Orders other than Lepidoptera*, (1) A *bracketed* asterisk denotes the reinstatement of a species long omitted from the British list, or the confirmation of one previously doubtful; (2) A formerly subspecific taxon raised to specific rank is treated as an addition to the fauna, but a correction of identity is not; and, finally (3) The "equals" sign indicates a *new* synonym, i.e. published for the first time; italics without this sign, recent synonymy that may be unfamiliar to many.

Vol. 95, 1983

LEPIDOPTERA

A

abreviata, Eupithecia	69
abietans, Acleris	193
abietella, Dioryctria	143
abruptaria, Menophra	90
acerbella, Epichoristodes	237
acetosae, Stigmella	189
acroxantha, Parocystola	103
acteon, Thymelicus	100, 101
acuta, Chrysodeixi	89, 91, 150
adippe=cydippe, Argynnis	97, 76
adjunctella, Coleophora	221
adpersella, Coleophora	220, 221
aequidentellus, Epermenia	191
aegeria, Pararge	7, 98, 101, 126, 175, 226, 248
aerugula, Nola	84, 90, 91, 118, 147
aescularia, Alsophila	68, 69, 123, 255
aestivella, Metzneria	192
aethiops, Erebia	10, 176
agestis, Aricia	43, 228
aglaja, Argynnis	37, 101, 176
agnotana, Pammene	194
Agonopteryx sp.	187, 192
agnotana, Pammene	83, 188
alberganus, Erebia	12, 13, 101, 102
albicosta, Coleophora	219
albidella, Coleophora	219
albimacula, Haden	222
albipuncta, Mythimna	71, 90, 148
albitarsella, Coleophora	183, 191, 218
albula, Megamola	147
alceae, Carcharedus	100
alcetas, Everes	99, 100, 102

PAGE

PAGE

alchimiella, Caloptilia	228
alciphron, Heodes	13, 124
alcon, Maculinea	101
alcyone, Hipparchia 12, 101,	124
alexis, Glaucopsyche	13
alimana, Phalonidia	193
allous, Aricia	124
alniaria, Ennomos	227
alpinana, Dichrorampha, 184,	194
alpinella, Elachista	192
alpium, Moma	215
alstroemeriana, Agonopterix	125
alticolella, Coleophora	221
alveus, Pyrgus	101
amanda, Agrodiaetus	101, 124
americanus, Pyrgus	99
amphitoe, Prepona	113
anceps, Apamea	70
angelicella, Paroranix	83
angustella, Alispa	195
angusticolella, Tischeria	116
angustiorana, Ditula	20
anteros, Ultraaricia	200
antiopa, Nymphalis	91, 140, 143
antiqua, Orgyia	122
apollo, Parnassius	12, 13, 101, 124, 171
aprilella, Metzneria	188, 192
aprilina, Dichonia	38, 204
aquilonar, Boloria	14
arcania, Coenonympha	11, 101
archesia, Precis	6
areola, Xylocampa	71, 186, 225
argiades, Everes	102
argiolus, Celastrina	20, 48, 99, 106, 178
argus, Plebejus	97, 98, 99, 101
argyrgnomon, Lycaeides	11

	PAGE
argyropeza, Ectoedemia	189
aridella, Pediasia	194
arion, Maculinea	100, 101, 232
aristaeus, Hipparchia	99
armigera, Heliconerpa	91, 149
aroaniensis, Agrodiaetus	196
artaxerxes, Aricia	101, 178
artemisiclella, Coleophora	221
astrantiae, Agonopteryx	192
atalanta, Vanessa	38, 39, 87, 89, 90, 91, 93, 106, 112, 117, 122, 126, 177, 228, 243, 224
athalia, Mellicta	14, 121, 179
atomaria, Ematurga	69, 70
atriplicis, Coleophora	221
atropos, Acherontia	39, 86, 91, 146
augur, Graphiphora	57
aulica, Hyphoraia	68, 70
aurantiana, Pamмене	194
aurinia, Euphydryas	177
australis, Colias	12, 100, 102, 143, 244, 246
autumnaria, Ennomos, 84, 117,	145
autumnata, Epirrita	228
avellaneda, Phoebeis	114

3

badiata, Anticlea	69, 116
badiella, Depressaria	192
bankiana, Deltote	92, 150
batis Thyatira	69, 226
baton, Philotes	98, 140
belia, Anthocharis	246
bellargus, Lysandra . . . 11, 25, 35,	101, 124, 178
benanderi, Coleophora	191, 220
bennetii, Agdistis	88
bernstorfii, Charaxes	252
betulae, Thecla	119, 178
betularia, Biston	20, 21, 226
betulicola, Caloptilia	228
bidentata, Odontopera	20, 21
binderella, Coleophora	191
biplaga, Erias	89, 150
bipunctella, Ethmia	231
bjerkandrella, Tebenna . . 28, 142,	188, 190
blandulella, Caryocolum	193
boeticus, Lampides . . 89, 99, 143,	243, 244
bractea, Autographa . . . 92, 119,	151, 152
brassicae, Mamestra	20
brassicae, Pieris . . 7, 104-106, 128,	164, 243, 244, 245
brendelli, Gnathothlibus	19-20

	PAGE
brumata, Operophtera	225
brunnearia, Selidosema	119
bucephala, Phalera	106

C

caecana, Cydia	194
caissa, Alaena	110
caja, Arctia	229
c-album, Polygonia	99, 126, 172, 228
callidice, Pontia	101, 102
calodactyla, Platyptilia	168, 169, 195
camilla, Ladoga	59, 179
capucina, Ptilodon	226
cardamines, Anthocharis	7, 35, 179, 226, 246,
cardui, Cynthia	87, 90, 91, 93, 97, 98, 99, 101, 106, 117, 124, 177, 228, 243, 244
carolynnae, Aloeides	1-6
carmelita, Odontosisa	204
carphodactylus, Leioptyla	185
carthami, Pyrgus	14
castanea, Xestia	224
cataphanes, Autophila	71
cecilia, Pyronia	99
celerio, Hippotion	38, 89, 91, 147
celtis, Libythea	169
cantaureata, Eupithecia	69
centrago, Atethmia	57
cerasivorella, Coleophora	191, 218
cerasana, Pandemis	20
cespitalis, Pyrausta	69
chloerata, Chloroclystis	84
christi, Erebia	13
chrysidiformis, Bembecia	76, 169, 170
chrysippus, Danaus	66, 120, 249
chrysorrhoea, Euproctis	70, 84, 92, 147, 224
cidarella, Bucculatrix	188, 190
cinctana, Pariclepsis	68
cinctaria, Cleora	70
cinxia, Melitaea	37, 124, 177, 178
citrana, Thiodia	194
clathrata, Semiothisa	57
clavipalpis, Caradrina	71
cleopatra, Gonepteryx	43, 97, 100, 246
clintoni, Scrobipalpa	193
chlorinde, Anteos	113
Coleophora sp.	187, 191
columbariella, Tinea	190
combinella, Pseudoswammerdamia	83
comes, Noctua	20

	PAGE
comma, <i>Hesperia</i>	179
<i>complanata</i> , <i>Eilema</i>	84
compositella, <i>Cydia</i>	194
compta, <i>Hadena</i>	57
compunctella, <i>Swammerdamia</i>	190
confusa, <i>Macdunnoughia</i>	23, 89, 90, 91, 151
confusalis, <i>Nola</i>	70
congressariella, <i>Nothris</i>	32, 193
conicolana, <i>Cydia</i>	163
consonaria, <i>Ectropis</i>	226
consortana, <i>Dicrorampha</i>	194
conspicillaris, <i>Egira</i>	91, 226
conturbatella, <i>Mompha</i>	193
convolutella, <i>Zophodia</i>	187, 195
convolvuli, <i>Agrius</i> 39, 87, 90,	145, 248
coracipennella, <i>Coleophora</i>	191
coridon, <i>Lysandra</i>	23, 100, 101, 178, 228
corinna, <i>Coenonympha</i>	98, 99
corylata, <i>Electrophaes</i>	226
coryli, <i>Colocasia</i>	71, 226
costalis, <i>Hypsopygia</i>	227
crassa, <i>Agrotis</i>	37
crataegi, <i>Aporia</i>	45-52, 124, 161-166, 170, 232, 233, 245
crepuscularia, <i>Ectropis</i>	226
cresphontes, <i>Papilio</i>	114
crisatella, <i>Bucculatrix</i>	183, 190
croceago, <i>Jodia</i>	71
crocea, <i>Colias</i>	36, 37, 90, 91, 93, 96, 98, 100, 101, 243, 246, 248
crocella, <i>Adela</i>	189
cruda, <i>Orthosia</i>	71, 225
cryptella, <i>Trifurcula</i>	189
cucullina, <i>Ptilodontella</i>	70
cultararia, <i>Drepana</i>	227
cumilana, <i>Eucosma</i>	64
cursoria, <i>Euxoa</i>	119
cynthia, <i>Euphydryas</i>	102
cytisella, <i>Paltodora</i>	192

D

dahlii, <i>Diarsia</i>	211
daphne, <i>Brenthis</i>	13, 101
daphnis, <i>Meleageria</i>	12, 100
daplidice, <i>Pontia</i>	100, 101, 243, 245
daria, <i>Charaxes</i>	252
darwiniana, <i>Caenonympha</i>	13
daucella, <i>Depressaria</i>	229
deauratella, <i>Coleophora</i>	219
debiliata, <i>Chloroclystis</i>	85
decentella, <i>Etainia</i>	189
decorella, <i>Teleiodes</i>	192
decrepitalis, <i>Udea</i>	195

defoliaria, <i>Erannis</i>	225
degeerella, <i>Nemophora</i>	123
deione, <i>Mellicta</i>	13, 124
dentaria, <i>Selenia</i>	43, 70, 87, 227
dentella, <i>Ypsolophus</i>	190
diamina, <i>Melitaea</i>	14
dido, <i>Philaethria</i>	113
didyma, <i>Melitaea</i>	13, 101, 124
dilutata, <i>Epirrita</i>	43
discordella, <i>Coleophora</i>	220
dispar, <i>Lymantria</i>	147, 152, 216
dissimilata, <i>Cataclysmis</i>	69
distsans, <i>Crombrugghia</i> ,	15-18 188, 195
distinctaria, <i>Eupithecia</i>	69
distinctata, <i>Aleucis</i>	70
dodomaensis , <i>Alaena</i>	107-110
dodoneata, <i>Eupithecia</i>	83
dolabraria, <i>Plagodis</i>	226
dominula, <i>Callimorpha</i>	82, 277
dorus, <i>Coenonympha</i>	97
douglasella, <i>Depressaria</i>	192
dromedarius, <i>Notodonta</i>	226
dryas, <i>Minois</i>	100
dulcella, <i>Stigmella</i>	83
duponcheli, <i>Leptidea</i>	100, 102

E

editha, <i>Phoebis</i>	113, 114
elbana, <i>Coenonympha</i>	100
elinguaria, <i>Crocallis</i>	21
elisa, <i>Fabriciana</i>	99
emargana, <i>Acleris</i>	132
emortualis, <i>Trisateles</i>	240
epiphron, <i>Erebia</i>	101
epomia, <i>Acraea</i>	66
equitella, <i>Glyphipteryx</i>	183
erythrocephala, <i>Conistra</i>	71
escheri, <i>Agrodiaetus</i>	100, 102
esculi, <i>Nordmannia</i>	97, 153
eumedon, <i>Eumedonia</i>	13, 101
euphrosyne, <i>Boloria</i>	13, 176
euphorbiae, <i>Acronicta</i>	71
euphorbiae, <i>Apatele</i>	119
exigua, <i>Sposoptera</i>	36, 57, 84, 90, 91, 94, 149
exiguata, <i>Eupithecia</i>	20
exsoleta, <i>Xylena</i>	43

F

fabressei, <i>Agrodiaetus</i>	23
fagata, <i>Operophtera</i>	43
fagella, <i>Diurnea</i>	226
fagi, <i>Stauropus</i>	70, 227
famula, <i>Bichroma</i>	69

PAGE

fasciaria, Hylaea	145
frblcu, Hamadryas	113
ferchaultella, Luffia	53, 55, 56
feronia, Hamadryas	113
ferrugalis, Udea	91, 93
ferula, Satyrus	13, 102
filipendulae, Nepticula	189
fischella, Coleophora	191
flammea, Panolis	225
flammea, Senta	90, 148
flaviciliana, Cochylis	193
flavicincta, Polymixis	20, 57
flavipennella, Coleophora	218
flavofasciata, Perizoma	57, 227
flavus, Thymelicus	124
flocciferus, Carcharodes	101
fluctuata, Xanthorrhoe	69, 211
formosanus, Lozotaeniodea	123
fraxini, Catocala	89, 151
freyerella, Cosmiotes	83
fritillarius, Pyrgus	124
fulgurata, Neptidopsis	155
fuliginaria, Parascotia	84
fulviguttella, Phaulernis	191
fulvimitrella, Triaxomera	189
fumatella, Chionodes	192
funerella, Ethmia	192
furcula, Furcula	226
fuscateella, Lampronia	189
fuscocuprella, Coleophora	191
fusconebulosa, Hepialus	211

G

galathea, Melanargia	7, 11, 13,
	101, 102, 124, 175, 228
gallii, Hyales	90, 146
gamma, Autographa	23, 71, 87, 90,
	91, 117, 227
geminana, Ancylis	194
glaucata, Cilix	69, 226
glaucicolella, Coleophora	221
glaucinalis, Orthopygia	195
glycerion, Caenonympha	101
glyphica, Ectypa	226
gnoma, Pheosia	227
gothica, Orthosia	71, 225
griseella, Trifurcula	189
gryphipennella, Coleophora	218, 226

H

haasi, Plutella	187, 191
hastata, Rheumaptera	231
hastiana, Acleris	132
hemerobiella, Coleophora	191
heracliana, Agonopteryx, 83,	142

PAGE

herminata, Diplodoma	183, 189
hexadactyla, Alucita	125
hibernicella, Psyche	53
hippocastinaria, Pachynemia	70
hippothoe, Paleochrysophanus	13, 101
hirtaria, Lycia	70
homerus, Papilio	114
honoraria, Campaea	70
hospiton, Papilio	98
hyale, Colias	100, 143, 244, 246
hyalinalis, Microstega	195
hyperantus, Aphantopus	35, 102,
	124, 176
hyperia, Biblis	113
hyperici, Actinotia	71

I

icarus, Polyommatus	23, 98, 99,
	100, 101, 124, 178, 226, 228, 249
idas, Aricia	100
ilicis, Nordmannia	100, 102, 153
impura, Mythimna	227
incerta, Orthosia	71
inconspiculella, Solenobia	189
insecurella, Epermenia	188, 191
intermedia, Thorectes	75
interrogationis, Syngrapha	23, 151
inulae, Coleophora	110
io, Inachis	9, 98, 175, 177,
	180, 248
iolas, Iolana	12, 13, 14
iphigenia nonacriensis, Agrodiaetus,	196-199
ipsilon, Agrotis	90, 91, 227
iris, Apatura	10, 177
irrearella, Setina	86

J

jacobaeae, Tyria	227
jaspidea, Valeria	68, 71
jatrophae, Anartia	185
johnsoni, Anaea	113
jota, Autographa	43
juncicolella, Coleophora	218
juniperata, Thera	64
jurtina, Maniola	35, 99, 101,
	102, 124, 176, 228, 249
jutta, Oeneis	140

K

knysna, Zizera	120
--------------------------	-----

L

laetus, Cromburgghia	15, 17
l-album, Mythimna	71
lapidella, Luffia	53, 187, 189
lappella, Metzneria	192
laricella, Coleophora	219
larseni, Charaxes	252
larseniella, Syncopacma	193
lathonia, Argynnis	99, 114, 180
latistria, Agriphila	194
lavatherae, Careharodus	12, 124
leautieri, Lithophane	52
leroma, Crudaria	1
leucostigma, Celaena	192, 148
leuwenhoekella Pancalia	83
levana, Araschnia	11, 89, 93, 102, 143
libatrix, Scoliopteryx	227
lienigalis, Pyralis	188, 195
lieniganus, Leioptulus	195
liegea, Erebia	101
ligustri, Sphinx	116
limbalis, Urespita	91, 142
limbaria, Isturgia	69
limoniella, Goniodoma	191
limosipennella, Coleoptera	191
lineata, Hyles	70, 146
lineola, Coleophora	219
lineola, Thymelicus	179
literana, Acleris	193
lithargyrinella, Coleophora	183, 184, 191, 219
littoralis, Lobesia	194
littoricolella, Elachista	65, 187, 192
livornica, Hyles	90, 94, 98
lixella, Coleophora	219
loniceræ, Zygaena	85
loreyi, mythimna	89, 148, 216
lucina, Hamearis	43, 97, 178, 226
lucipara, Euplexia	20
lunalis, Herminia	133
lunaris, Batia	192
lunaris, Minucia	68, 71
lunosa, Omphaloscelis	125
lunularia, Selenia	43, 70
lurideola, Eilema	147
lutescens, Aloeides	3, 4, 5
lutipennella, Coleophora	218
lutulentula, Aporophyla	
luteolata, Opistopgraptis	21, 70
lutulentula, Meonochroa	192
lycaon, Hyponephele	102

M

machaon, Papilio	12, 83, 90, 98, 101, 102, 143, 244
----------------------------	------------------------------------

machaonides, Papilio	114
machinella, Coleophora	191
maera, Lasiommata	12, 101, 102, 124
malvae, Pyrgus	101, 124, 179
maluti, Aloeides	173
marginaria, Agriopis	70, 225
maritima, Chilodes	57
maritimella Coleophora	221
matura, Thalpophila	227
maturna, Melicta	11, 140
mannii, Artogeia	12, 13, 100, 101, 102, 124
meeki, Gnathothilbus	19
megacephala Aconicta	43
megera, Lasiommata	7-10, 98, 99, 100, 124, 175, 248
mendica, Diarsia	84
meolans, Erebia	101
merdella, Proterospastis, 73,	75
meticulosa, Phlogophora	20, 40, 71, 106, 227
metzneriana, Eucosma	188, 194
mi, Euclidimera	226
milhauseri, Harpyia	70
milvipennis, Coleophora	218
minimus, Cupido	13, 100, 124, 178, 228, 248
miniosa, Orthosia	71, 199, 225
minorella, Glyphipterix	190
miscella, Mompha	193
mnemosyne, Parnassius	13
molothina, Lycophotia	71
monacha, Lymantria	227
montanata, Xanthorhoe	21
mucidarius, Gnophos	70
munda, Orthosia	225
murariella Tinea	73, 75
murinipennella, Coleophora	221
muscerda, Pelosia	222
myrtillana, Greselda	194

N

nanella, Recurvaria	192
napi, Pieris (Artogeia)	7, 10, 11, 13, 98, 99, 124, 226, 244, 245
narbonea, Pterophora	69
nerbonea, Polia	204
nemoralis, Agrotera	37, 188, 195
ni, Trichoplusia	84, 89, 90, 91, 94, 117, 150
nicias, Aricia	101
noctuella, Nomophila	87, 90, 91, 93
nodicolella, Mompha	193
nostrodamus, Gegenes	120
notata, Semiothisa	227
notha, Archiearis	231

	PAGE
nubilalis, Ostrinia	216
nupta, Catocala	84
nymphagoga Catocala	133, 151

O

obscurana, Pammene	169
obsitalis, Hypena	73, 74, 75, 126
obstipata, Orthonama	90, 91, 145
occulta, Eurois	23, 90, 147
ocellea, Euchromius	33, 89, 142, 188, 194
ochrea, Coleophora	188
ochroleuca, Eremobia	227
octavia, Precis	6, 211
oedippus, Coenonympha	102
officinalis, Sanguisorba	102
oenone, Junonia	66
oleracea, Laconobia	20
ononidis, Parectopa	190
operculella, Phthotimaea	142, 188, 193
opione, Neptidopsis	156
orbitella, Coleophora	218
orbonalis, Lucinodes	187
orichalcea, Diachrysia	89, 151
ornitopus, Lithophane	71
orobana, Cydia	194
orpheus, Ultraaricia	200, 201
ostrina, Eublemma	224
overlaeti, Ornipholidotes	107
oxyacanthae, Phyllonorycter	83

P

pactolana, Cydia	188, 194
palaeno, Colias	11, 14, 171
paleacea, Enargia	92, 148
palealis, Sitochroa	27, 143
pandora, Boloria	102
pallens, Mythimna	227
pallifrontana, Cydia	194
palustrella, Monochroa	67
pamphilus, Coenonympha	99, 249
pandora, Pandoriana	99
pandrose, Erebia	140
paphia, Argynnis	35, 99, 101, 140, 176
paradoxa, Stigmella	83
paripennella, Coleophora	220
parva, Eublemma	39, 90, 150, 152
pauperana, Eucosma	83, 194
pavonia, Saturnia	57, 117
peltigera, Heliothis	36, 90, 149
pelopi, Agrodiaetus	196
pennaria, Colotois	228
peribenanderi, Coleophora	220
phicomone, Colias	101, 102
phlaeas, Lycaena	98, 99, 101

PAGE

phoebe, Melitaea	124
phoeniceata, Eupithecia	37
phragmitella, Chilo	184
pilosaria, Apocheima	225
pinastri, Hyloicus	98, 184, 227
pityocampa, Thalmetopoea	70
plebejana, Crocidosema	117, 188, 194
plexippus, Danaus	120, 144
pluto, Erebia	102
podalirius, Iphiclidea	244
polychloros, Nymphalis	37, 43, 101, 143
populeti, Orthosia	225
populi, Limenitis	11
populi, Poecilocampa	228
posticana, Blastesthia	194
postvittana, Epiphyas	120, 237
potatoria, Philudoria	121, 227
primaria, Theria	225
pringlei, Lepidochrysops	1
procellata, Melanthia	227
procerella, Bisigna	188, 192
processionea, Thaumetopoea	216
procellata, Melanthia	227
pronuba, Noctua	20, 71, 90, 227
pronubama, Cacoecimorpha	193
prunata, Eulithis	227
pruni, Strymonidia	42, 179
pugnax, Discestra	71
pulchella, Utetheisa	89, 91, 147
pulchrina, Autographa	227
pupillaria, Cyclophora	69, 144
purdeyi, Clavigesta	194
pusicariae, Melanchra	20
pupillana, Eucosma	194
papillaria, Cyclophora	144
pylaon, Plebejus	12
pyramidea, Amphipyra	20, 227
pyrina, Zeuzera	227
pyrrhulipennella, Coleophora	219

Q

quadra, Lithosia	90, 92
quadrimaculella, Bohemannia	198
quadripuncta, Oegoconia	193
quadripunctaria, Quercusia	147
quercus, Quercusia	100, 120, 178
quercuscalis, Andricus	123

R

ranavalona, Acraea	66
rapae, Pieris (Artogeia)	7, 100, 101, 104-106, 121, 124, 243, 245
raptricula, Cryphia	231
ravida, Spaelothis	57

	PAGE
reducta, Limenitia	13, 100
reliquana, Lobesia	194
revayana, Nycteola	71
rhamni, Gonepteryx, 43, 175,	225, 246
rhomboidaia, Peribatodes	20
ridens, Polyplocia	69
rigana, Xerocnephasia	68
ripartii, Agrodiaetus	102
rivata, Epirrhoe	226
rivularis, Hadenia	226
roboraria, Boarmia	227
roboris, Phyllonorycta	72, 190
robustella, Caloptilia	190
rorrella, Yponomeuta	190
rubi, Callophrys	102
rubiginata, Scopula	144
rubiginea, Conistra	71, 231
rubricosa, Cerastis	71
rufata, Chesias	69
ruficornis, Drymonia	68, 70
raffasciata, Gymnoscelis	20, 69
ruficinerea, Elachista	83
rugosana, Phtheochroa	69
rumicis, Acronycta	43, 71
rumina, Zerinthia	120, 244
rusticella, Monopis	212
ruticella Spudaea	68, 71

S

sacraria, Rhodometra	39, 90, 103
	144, 216, 231
salicata, Coenotephria	211
salicorniae, Coleophora	64
salicalis, Colobochoyla	240
samiatella, Stigmella	188, 189
sangiella, Syncopacma	184, 193
saportella, Phyllonorycter	188, 190
saturatella, Coleophora	219
saucia, Peridroma	39, 91, 94, 227
saxifragae, Stenoptilia	195
scalptata-syriata group, Eupithecia	251
shuetzeella, Dioryctria	187, 195
segetum, Agrotis	70
scoticella, Parornix	212
sehestediana, Choreutis	190
selenae, Clossiana	176
semele, Eumenis	175, 248
semiargus, Cyaniris	13, 101
sennae, Phoebis	113, 114
sepium, Bacotia	53, 55
sequella, Ypsolopha	227
sericealis, Rivula	92, 151
serpylletorum, Coleophora	221
serratella, Coleophora	218
siccifolia, Coleophora	218

PAGE

silaceata, Ecliptopera	226
simplonia, Euchloe	12, 13, 245
simulans, Rhyacia	57, 67, 84, 87, 88, 118
sinapis, Leptidea	7, 10, 13, 98, 99, 100, 124, 179, 246
smaragdaria, Thetidia	42
smilesi, Charazes,	252
socia, Lithophane	225
sociella, Aphomia	227, 195
sodaliana, Husterosia	193
sororculana, Apotomis	193
spadicearia, Xanthorrhoe	83
sparsana, Acleris	193
spini, Strymonidia	100
spissicornis, Coleophora	219
sponsa, Catocala	227
stabilella, Cosmiotes	192
stabilis, Orthosia	20, 71, 125
staudingeri, Conistra	71
stellatarum, Macroglossum	36, 70, 91, 93, 122, 224
sternipennella, Coleophora	220
sticticalis, Margaritia	142
strataria, Biston	70
striatipennella, Coleophora	220
strigilata, Polypogon	238
subalbidella, Elachista	192
suberifolia, Epicnaptera	69
suffumata, Lampropteryx	226
suffusella, Monochroa	192
sulphurella, Esperia	124
suspecta, Parastichtis	148
sylvata, Hydrelia	250
sylvestris, Thymelicus	179, 228
syringella, Caloptilia	83

T

taeniipennella, Coleoptera	221
tages, Erynnis	101, 102, 179, 226
tamesis, Coleophora	221
tanganyike, Ornipholidotes	107-110
tarsicrinalis, Polypogon	151
tarsipennalis, Herminia	133
tau, Aglia	69
telejeus, Maculinea	102
tephradactyla, Leipotylus	195
terminella, Mompha	193
tersata, Horisme	69
tetralunaria, Selenia	43
thapsiella, Agonopteryx, 73,	74
thapsiphaga, Cucullia	71
testaceala, Hydrelia	250
thersites, Plebicula	14, 100
thoracella, Bucculatrix	190
thymula, Nola	70

thyra, Aloeidea	5, 6
titania, Clossiana	101
tithonus, Pyronia	99, 176, 228
tityrus, Heodes	101
tophaceata, Nebula	69
transversa, Eupsilia	116, 123, 226
trapezina, Cosmia	20
trauniana, Pammene	194
treitschkei, Discestra	71
triaria, Erebia	12
trifasciata, Argurestha	187, 190
trifolii, Discestra	148
trifolii, Zygaena	85
tripoliana, Eucosma	88
trochilella, Coleophora	84, 191
trogloiditella, Coleophora	220
trux, Agrotis	71
tunbergella, Micropterix	189
*turbidella, Ectoedemia	188, 189
typica, Naenia 20,	43

U

uliginosellus, Crambus	194
ulmi, Dicranura	68, 70
ultimella, Depressaria	188, 192, 229, 230
unguicella, Ancylys	68
unipuncta, Mythimna	90, 91, 148
unionalis, Palpita	90, 91, 94, 123, 143, 188, 216
urticae, Aglais	180, 225, 228

V

vaccinii, Conistra	71, 116
vandalicella, Eudonia	194
v-ata, Chrysoclistis	69
venatus, Ochloides	124
verbasci, Cucullia	20
vestigialis, Agrotis	71
versurella, Coleophora	220
vetusta, Xylena	43
viburnana, Aphelia	193
viminitella, Coleophora	191, 218
vinula, Cerura	70, 226
viretata, Acasis	69, 227
viola, Charaxes	253
violacea, Coleophora	222
virgaureata, Eupithecia	169
virgauriae, Coleophora	169
virgauriae, Heodes	101, 124
vitalbata, Horisme	69, 226
vitellina, Mythimna	80, 90, 91, 148, 216, 231
vulgella, Teleiodes	116, 192
vitisella, Coleophora	218

W

w-album, Strymonidia	35, 67, 139, 179
wauaria, Semiothisa	57
weaverella, Monopis	212
weirella, Depressaria	192
wykehami, Crudaria	1

X

xylostella, Plutella	80, 90, 165
--------------------------------	-------------

Z

*zelleralis, Herminia	133, 151
setides, Battus	114
zoegana, Agapeta	227

COLEOPTERA

Adalia bipunctata	30
Agonum gracilipes	205-7
Amara aenea, aulica, bifrons, tibialis	205
Anomala aenea	96
Aspisoma ignitum v. polyzona	185
Atholus confinis	185
Bradycellus harpalinus	205
Brosicus cephalotes	95
Calvia 14-guttata	30
Cantharid <i>indet.</i>	185
Carabus granulatus	82
monilis, nemoralis	80-1
problematicus	81
violaceus	81-2
Chilocorus renipustulatus	30
Chlorophorus pilosus	
v. glabromaculatus	195
Chrysolina brunsvicensis, graminis, polita, staphylea	152
Cicindela maritima	96
Coccinella 7-punctata	29-31
11-punctata	29-31, 201
Crypticus sp.	185
Cryptorhynchus lapathi	96
Cycloneda sanguinea	185
Diaprepes abbreviatus, famelicus	186
Dorcatoma chrysomelina, flavicornis	115
dresdensis	116, 248
serra	248
Eburia (Eubria <i>err.</i>) 10-maculata	185
Eledona agricola	222
Euchlora dubia, see Anomala	
Eurynebria complanata	95-6

PAGE

<i>Galerucella tropica</i>	185
<i>Gronops</i> * <i>inaequelis</i> , <i>lunatus</i>	213-5
<i>Gymnetron pascuorum</i> , <i>plantaginis</i>	135-8
<i>Harpalus affinis</i> (<i>aeneus</i>), <i>anxius</i> , <i>rubripes</i> , <i>rufitarsis</i> , <i>smaragdinus</i>	205
<i>Heteroderes</i> sp.	185
<i>Homophoeta albicollis</i>	185
<i>Hypera arator</i>	167-8
<i>Lachnopus</i> sp. <i>curvipes</i> grp.	186
<i>Laricobius erichsoni</i>	207
<i>Leistus ferrugineus</i>	205
<i>Lema</i> sp.	185
<i>Leptura scutellata</i>	122
<i>Ligyrys cuniculus</i>	185
<i>Litostylus pudens</i>	186
<i>Metabletus foveatus</i>	205
<i>Metriona trisignata</i>	185
<i>Microlestes maurus</i>	205
<i>Nanophyes marmoratus</i>	167
<i>Nebria</i> , see <i>Eurynebria</i>	
<i>Olisthopus rotundatus</i>	205
<i>Panagaeus bipustulatus</i>	115
<i>Phaleria fulva</i>	185
<i>Phylan gibbus</i>	96
<i>Phytonomus</i> , see <i>Hypera</i>	
<i>Propylea</i> 14- <i>punctata</i>	29-30
<i>Pseudomus</i> sp.	186
<i>Rhizophagus depressus</i> , <i>nitidulus</i>	121
<i>Sitophilus linearis</i>	185
<i>Trechus obtusus</i>	205
<i>Trogoderma ornatum</i>	185
<i>Trox sabulosus</i>	156

DERMAPTERA

<i>Euborellia stali</i>	185
-----------------------------------	-----

DIPTERA

<i>Acanthiptera rohrelliformis</i>	27
<i>Agromyza abiens</i> , <i>myosotidis</i>	77
<i>Anasimyia contracta</i> , <i>lineata</i> , <i>transfuga</i>	72
<i>Cerodontha ireos</i>	79
<i>Cheilosia</i> sp.	85
<i>Chrysogaster hirtella</i> , <i>solstitialis</i>	85
<i>Diastata nebulosa</i>	25
<i>Dizygomyza</i> , see <i>Cerodontha</i>	
<i>Dorycera graminum</i>	25
<i>Emphis grisea</i>	85
<i>Episyrphus balteatus</i>	41
<i>Eristalis tenax</i>	115
<i>Ernestia laevigata</i> , <i>rudis</i>	26
<i>Estheria cristata</i>	26
<i>Eustalomyia festiva</i>	27
<i>Graphogaster</i> , see <i>Rondania</i>	

PAGE

<i>Graphomyia picta</i>	27
<i>Helophilus</i> , see <i>Anasimyia</i> , <i>Parhelophilus</i>	
<i>Lejogaster metallina</i>	85
<i>Lipoptena cervi</i>	22-3
<i>Liriomyza strigata</i>	27
<i>Lonchaea contigua</i> , <i>flavidipennis</i> (<i>limatula</i>), <i>postica</i>	25
<i>Mallota cimbiciformis</i>	82
<i>Megamerina dolium</i>	24
<i>Megaselia</i> * <i>aculeata</i> , * <i>insons</i>	181
* <i>intercostata</i>	181-2
* <i>subconvexa</i>	182
<i>Melangyna labiatarum</i> , <i>umbellatarum</i> ,	85
<i>Metasyrphus corollae</i>	31
<i>Napomyza scrophulariae</i>	77
<i>Norellia spinipes</i>	26
<i>Ochthera mantis</i>	154
<i>Orthoneura nobilis</i> , <i>splendens</i>	85
<i>Otites guttata</i>	25
<i>Paraphytomyza discrepans</i> , <i>populicola</i> , <i>similis</i>	77
<i>Parhelophilus</i>	72
<i>Phaonia pratensis</i> , <i>vittifera</i>	27
<i>Pherbellia annulipes</i>	25
<i>Phryxe vulgaris</i>	104, 105
<i>Phytomyza aprilina</i> , <i>autumnalis</i> , <i>calthophila</i>	77
<i>chaerophylli</i> , <i>crassiseta</i> , <i>cytisi</i> , <i>hendeli</i> , <i>heracleana</i> , <i>horticola</i> , <i>ilicis</i> , <i>lonicerae</i> (<i>harlemensis</i>), <i>matricariae</i> , <i>nigra</i>	78
<i>notata</i>	78-9
<i>obscura</i> , <i>periclymeni</i> , <i>petoei</i> , <i>primulae</i> , <i>sphondyliivora</i> , <i>tussilaginis</i> , <i>virgaureae</i>	79
<i>Rainieria calceata</i>	24
<i>Renocera fuscinervis</i>	25
<i>Rondania fasciata</i>	26
<i>Servillia lurida</i>	26
<i>Steganina coleoprata</i>	25
<i>Tachydromia</i> * <i>terricola</i>	223-4
<i>Tephritis formosa</i> , <i>hyoscyami</i> , <i>cometa</i> , <i>conjuncta</i>	24
<i>Trixa caeruleascens</i>	26

HEMIPTERA

<i>Brevicoryne brassicae</i>	31
<i>Odontoscylis dorsalis</i>	205

HYMENOPTERA

<i>Allantus cinctus</i> , <i>Ametastegia</i>	208-9
<i>Andricus quercuscalicis</i>	86, 123
<i>Apanteles glomeratus</i>	104-5

	PAGE
Apethymus	209
Bombus sp.	103
Calameuta pallipes, filiformis	111
Camponotus cruentatus	153-4
Dineura virididorsata	208
Hemichroa crocea	208
Lysibia nana	105, 106
Pimpla instigator	104, 105
Protemphytus	209
Pteromalus puparum	104, 105
Tetrastichus galactopus	105, 106
Vespa (Vespula) sp.	103

ODONATA

Aeshna caerulea, grandis	131
cyanea, mixta	132
isosceles	130
juncea	131, 132
Agrion splendens, virgo	129
Anax imperator	129
Brachytron pratense	129, 130
Ceriagrion tenellum	130
Coenagrion hastulatum	131
mercuriale, puella, pulchellum	130
Cordulegaster boltonii	129
Cordulia aenea	129, 130
Enallagma cyathigerum	129

	PAGE
Erythrodiplax umbrata	185
Erythromma najas	130
Gomphus vulgatissimus	129
Ischnura elegans	130
pumilio	131
Lepthemis vesiculosa	185
Lestes sponsa	131
Leucorrhinia dubia	129
Libellula depressa, 4-maculata	129
fulva	130
Orthemis ferruginea	185
Orthetrum cancellatum,	
coerulescens	130
Platynemesis pennipes	130
Pyrrhosoma nymphula	129
Somatochlora arctica	131
metallica	130
Sympetrum danae, sanguineum	130
nigrescens	131
striolatum	132
Triacanthagyna trifida	185

ORTHOPTERA

Conocephalus dorsalis	83
Leptophyes punctatissima	123
Tettigonia viridissima	123



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THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

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TWO BUTTERFLY SURVEYS – CAN YOU HELP US?

Concern over the status of the Marsh Fritillary (*Eurodryas aurinia*) and the High Brown Fritillary (*Argynnis addippe*) has led the Joint Committee for the Conservation of British Insects to undertake surveys of these two local butterflies in 1983.

The main aims of the surveys are to locate and measure the size of all remaining colonies in England and Wales. Some details of all known sites in Scotland and Ireland will also be collected.

We would be most grateful to receive any records for these two butterflies, including sites where they are now extinct. All information will be treated with discretion and acknowledged in the concluding report.

Our thanks in anticipation.

Please contact: **D. J. Simcox,**

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THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1982

By R. F. BRETHERTON* and J. M. CHALMERS-HUNT**

For numbers of records of many immigrant species, both common and scarcer, 1982 was a bumper year, equalling or excelling the memorable season of 1976. The number of species which are usually regarded as wholly immigrant, at 40, was not indeed outstanding; but special interest was provided by many records of probable or possible immigrant examples of resident species. These have been marked with a star in the list of species in Annexe II, and the reasons for uncertainty about some of them are discussed below.

The most striking event was the invasion of *Trichoplusia ni* Hbn., of which nearly 70 were reported. This was probably the largest yet known, as the numbers given in the annual migration records for the previous best years, 1958 and 1953, are only 24 and 20. Of *Eublemma parva* Hbn. only one adult was reported, at Dumfries in July; but many larvae were found in south Devon in August and September from which moths were reared. The very scarce *Plusias* were well represented by three *Chrysodeixis acuta* Walker in Essex (one in September) and Sussex (two in September and November), two *Diachrysia orichalcea* Fab. in Sussex in August and October, and two *Macdunnoughia confusa* Steph. in Norfolk and Essex in August. The third known British specimen of the African *Earias biplaga* Walker was trapped at Lymington, Hampshire on July 23: this may have been naturally immigrant or, possibly accidentally introduced. The butterfly *Araschnia levana* L. was previously known in England only as a result of artificial introduction and temporary establishment about 1912; but on May 21 1982 one was disturbed from bilberry in Surrey. As immigrations of *Vanessa atalanta* L. and of the moths *Autographa gamma* L. and *Plutella xylostella* L. were taking place around that date it is reasonable to suppose that it came with them from France.

Other good single records were of *Euchromius ocella* Haw. in Wiltshire, in October, *Lampides boeticus* L. seen in Suffolk on July 23, *Hippotion celerio* L. in Roxburghshire on November 7, *Mythimna loreyi* Dup. in Cornwall in August, *Catocala fraxini* L. in Hampshire in September and *Utetheisa pulchella* L. in Co. Kerry in October.

For much of the season, from March until late June, most of England had dry and very sunny weather with long periods of high temperatures by day and, when there was cloud, by night also. Winds were mainly from the east, but veering fairly often to south east, south and even occasionally south west, so allowing varied arrivals of immigrants, though mostly in small numbers and from relatively near sources. In July and early August conditions became

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more unsettled, with rain and longer intervals of variable wind; but day and night temperatures remained very high. After about the middle of August, however, the easterly air-stream disappeared altogether, giving place to alternations of north west with south west and occasionally south winds more favourable for arrivals of the usual autumn immigrants from Spain and possibly from north Africa. This background serves to explain the sequence and content of the immigrations.

No late winter influx appears to have been noted, and in April only a few *Agrotis ipsilon* L. were seen. About May 15 *V. atalanta* L., *A. gamma*, *P. xylostella*, *Cynthia cardui* L. and a few *Nomophila noctuella* D. & S. arrived, and influxes of these species appear to have continued in good numbers at intervals through June and into July. In the last days of the month and in early June there was a more varied immigration which included *Mythimna vitellina* Hbn. in Cornwall, *Senta flammea* Curtis and *Papilio machaon* L. in Kent, *Colias croceus* Fourc., *Orthonama obstipata* Fab. and a number of *Macroglossa stellatarum* L. A further wave which began about June 14 added the first *Heliothis peltigera* D. & S., *Rhometra sacraria* L. (in Ireland) *Mythimna unipuncta* Haw. and *Hyles livornica* Esp. All these presumably came from the south west during short breaks in the easterly winds. The last days of the month and July 1 and 2 saw another small invasion of mainly similar origin which included three more *H. livornica*, the first English *sacraria*, *Agrius convolvuli* L. and *Palpita unionalis* Hbn., as well as two probably immigrant *Lithosia quadra* L.

After some days of cool northwesterly winds the most interesting immigration of the year came in between July 9 and 20, with winds varying from south east to south west and very high temperatures. It began with a major influx of *Spodoptera exigua* Hbn., *M. stellatarum*, *L. quadra*, with records of a dozen *T. ni* spread in the period, many more *H. peltigera*, eight *Nola aerugula* Hbn., *Hyles gallii* Rott. in Sussex and Orkney and the only recorded adult of *E. parva*, as well as several probable immigrants of resident species; there were large scores of *Autographa gamma* along the south coast, and on July 13 three coastal traps in Dorset were filled by an estimated 6,000 *Noctua pronuba*, thus establishing its credentials as an immigrant. Including the commoners, at least 30 immigrant and probably immigrant species were reported between July 8 and 23. The arrivals were mainly on the south coast of England, but with considerable extension up the east coast to Yorkshire; western Britain and Ireland seem to have received little at this time. In the last few days of July and in early August, with a strong recurrence of east and south east winds and high temperatures, there was further movement across the North Sea, bringing *H. gallii*, a number of *Eurois occulta* L., probable immigrants of several other resident species, and a single specimen of *M. confusa* in Norfolk; but records of *Mythimna albipuncta* D. & S. and *A. convolvuli* in Dorset and Sussex suggest that arrivals from the south were still continuing. There was also a sharp rise in the records of the common butterflies *V. atalanta*, *C. cardui* and *C. croceus*; but it is not

clear whether this was mainly due to immigration or to the emergence of offspring from May and June arrivals. During the remainder of August also, most of the scattered records of these and other species were probably of locally bred examples; but another *M. confusa* was trapped in Essex, on August 24 and in the last days *M. vitellina* was common in Cornwall and there were the first of the main invasion of *A. convolvuli*.

Mass immigration began early in September, and reached its peak both of species and numbers about September 17 in south west and south winds, which blew round the areas of high pressure moving slowly from the Azores across Spain, France and southern Britain. After a week's pause, there was a further influx in the last week in more disturbed conditions with fronts moving rapidly over the British Isles from the south west. The peak period was distinguished by the second invasion of *T. ni*, of which over 50 were reported, and of *S. exigua* and *P. unionalis* and, among the common species, by many *C. cardui*, *V. atalanta* and *C. croceus*, apparently moving by night: these were trapped together at Portland on the night of September 19, and of *V. atalanta* about 50 were counted at Padstow, Cornwall on the morning of September 14, sitting exhausted on trees and grasses. *M. stellatarum* was also reported in large numbers; of *A. gamma* 272 were trapped in co. Cork on September 16, *A. ipsilon* and *P. saucia* were widely common with, for the first time this year, *N. noctuella*. *A. convolvuli* was numerous, but reached its peak at the end of the month and in the first days of October. It is to be noted, however, that single specimens were seen on North Sea oil rigs on September 11, 26 and 29, in Aberdeen City on September 28, and a *Nymphalis antiopa* L. in Orkney on September 16, being apparently exceptions to the exclusively south western origins of these immigrations, which provided almost all of the 20 scarcer species recorded in the month.

In October the weather was dominated by a succession of depressions over the British Isles, during which the winds originated mainly in the North Atlantic. Records were chiefly of immigrants surviving from September or of local descendents of still earlier arrivals; of *V. atalanta* large southward movements were noticed in several places along the east coast. The considerable numbers of *A. ipsilon*, *P. saucia* and *P. unionalis*, however, may have included some new immigrants, and the second Irish example reported of *T. ni* was probably a primary immigrant, as may have been the Irish *U. pulchella*. Early November, which is sometimes an interesting period, showed some improvement on October, with some 15 records of *O. obstipata*, several of *M. vitellina*, *M. unipuncta*, *P. saucia* and many *Udea ferrugalis* Hbn., as well as two *Uresiphita limbalis* D. & S. and singles of *H. armigera*, *A. atropos*, *C. acuta*, and the only *Hippotion celerio* L., which was found on November 7 in Roxburghshire. These records coincided with more southerly winds, and most of them probably represented primary immigrants. The few *V. atalanta*, *A. ipsilon*, and *A. gamma* which continued into December were probably locally bred.

Some explanation is needed of the unusual number, twenty-five species, listed as probable or possible immigrants of resident species. The uncertainty of status mainly concerns examples of resident species which occurred in 1982 on or near the south and east coasts extending to Yorkshire, and also some in Orkney, coinciding with undoubted immigrants in mid July and early August. Thus of *N. aerugula* between July 9 and 15 four were recorded at Minster-in-Sheppey and Orlestone in Kent, one on the coast of Essex and three at Spurn Point and Flamborough in Yorkshire. The only known British colony, in Kent, became extinct about 1900, and the few records of singles there, and of two trapped at Spurn in 1980 have been regarded as immigrant. It seems highly probable that all the examples in 1982 came in south east winds from the coast of Belgium, where the species is said to be common. More doubt must, however, attach to the numerous *M. albula* trapped on the same and later nights at Minster-in-Sheppey and also at Bradwell-on-Sea in Essex, and also to examples of *Deltote bankiana* Fab. on the cliffs above St. Margaret's Bay and Boughton Aluph in Kent, since *M. albula* is certainly resident in Kent and been spreading elsewhere, while *D. bankiana*, once thought to be only an immigrant to Kent, appears to have become recently established in its eastern corner.

Autographa bractea D. & S., recorded for the first time in Kent at Minster-in-Sheppey and St. Margaret's Bay on July 13 and 14, at Muston on the Yorkshire coast on July 17 and 20, and also in Hertfordshire on July 31, presents a rather different problem. Always resident in Scotland and northern England, in recent years it has spread steadily southwards through the west Midlands and Wales. During the same period, however, it has also moved south and west through the Netherlands, and scattered records on the coasts of Yorkshire and Sussex probably result from this movement rather than from the internal spread. *Euproctis chrysorrhoea* L., of which two were found in Yorkshire on July 7 and 15, was known there previously only from captures in similar circumstances in 1973; it is a local coastal plague from Kent to Suffolk. On the south coast, the wide spread of records of *Lithosia quadra* L. and the great weight of those at traps in Hampshire appear to establish them as immigrant, despite the known residence of the species in the New Forest; the fact that all were males is, however, a curious feature. For *Enargia paleacea* Esp., distance from its nearest English habitats in Worcestershire and further north is sufficient indication of immigrant status for the examples in Dorset, Sussex and Surrey on July 16 and 18 and of that in Kent on August 1.

Coincidence with the immigration of late July and early August gave a similar set of problems for the status of *Parastichtis suspecta* Hbn., *Rivula sericealis* Scop., *Parascotia fuliginaria* L. on the Yorkshire coast, and for *Celaena leucostigma* Hbn. f. *typica* there and in Orkney, which have not previously been suspected of immigration. In judging these and similar uncertainties it should be remembered that high night temperatures combined with unwonted abundance caused wide dispersal of many purely resident species and enabled

them to be noted in unexpected places, as happened also in 1976. An alternative explanation for the appearance of some of the suspected immigrants far up the east coast might be their carriage from further south in winds of the same general direction as those which brought the undoubted immigrants. In the present state of our knowledge, firm verdicts may be best withheld.

Seven species of the scarce butterflies were reported, including the unique occurrence of *A. levana* already mentioned; but unfortunately full confirmation of identity or natural immigrant status for some of the records is lacking. Of the common species *Vanessa atalanta* was abundant. Very early examples were seen on February 15 and April 4 in S. Devon, and it benefitted from strong immigrations about May 15, in early June and again in July, when conditions for local breeding were good. There were further influxes in the first week of August and in mid September, during which about 80 individuals were found in light traps. Southward flights were noticed in October, and in the south butterflies were still numerous in some places in November. The last record was of one settled in a house at Stourbridge, Worcestershire, on December 22. The species was also unusually common in Wales and Scotland, where its range reached Sutherland and Orkney.

Cynthia cardui L. was in above average numbers: records received probably cover about 1,000 butterflies and some larvae; but there was no mass immigration comparable to that in 1980. The first record was at Malborough, south Devon on April 14, but only five were reported in May. There was good immigration in early and mid June and again about July 17. Thereafter the majority of records probably referred to off-spring of the early immigrants, though the species certainly shared in the varied invasion of mid September, when some were found in light traps in several places. Early cold and rain in October killed off both larvae and adults; records are few, the last being at Spurn on October 15. *C. cardui* was recorded, outside the south coastal counties, most in Yorkshire, Lincolnshire and widely in Scotland, where it reached the Isle of Canna as early as June 2 and Orkney by June 26. In Ireland it seems to have been widespread and fairly common.

Colias crocea Fourc. had another poor season. About 120 were reported; but of these 40 were in west Cornwall, 20 in Dorset and 20 in Sussex, in which counties alone there were records of early immigrants in June and July. Elsewhere it was seen very thinly in twelve English and Welsh and three Irish counties, with the most northerly singles at Newbrough, Anglesey and Spurn, Yorkshire. Most of the records fell between August 8 and September 20. Their dates and places suggest that the earlier ones resulted from local breeding, the later from a few immigrants in the September influx. The last was at Eastbourne on October 14.

The common moths were all much above their usual numbers, except that *N. noctuella* and *U. ferrugalis* were few until September and October. Most remarkable was the diurnal *M. stellatarum* of which over 800 were reported, and also larvae in many places. The

first were seen at Burley, Hampshire and at Aberdeen on June 6 and 7, though some had been noticed on the Santander to Plymouth ferry in the Bay of Biscay on May 25. Thereafter there were almost daily records through July; the highest numbers were reached in September, with some through October and the last at Highcliffe, Hampshire on November 11. *P. saucia*, with over 300 covered by reports, was also much more plentiful and widespread than usual. The first record was of one taken at sugar at Rannoch, Perthshire on May 17, but immigrants in May and June were generally few. Later, larvae were found as far north as Gartlea, Dumbartonshire but it seems that most of the abundance of moths came from heavy and sudden immigration in September. They were still numerous in October, and the last was noted at Walberswick, Suffolk on November 11. All the common immigrant species, however, gained from good breeding conditions in the early summer, and it is not possible to judge the proportions which primary immigration contributed to their totals.

The great invasion of *T. ni* was in two parts. A dozen were recorded from July 9 to 23; except for one at Spurn, Yorkshire, these were confined to Sussex and Hampshire. A much bigger influx began probably on September 9 and reached its peak between September 15 and 18. Several anomalous records in August and the first week of September were perhaps of offspring from early July arrivals; but no larvae were reported, and several females retained for breeding failed to lay other than infertile eggs. This may indicate that the immigrant females were sexually immature on arrival. The second invasion was more widespread than the first, the 50 records being spread round the coasts from south Devon to south Yorkshire and in four inland counties to Warwickshire. The last English record was in Essex on September 25; but the only two Irish records received were in co. Cork on September 19 and October 10.

The abundance of other usually scarce immigrants is fully indicated in Annexe II, and needs little comment. It is, however, interesting to note that the two main invasions of *S. exigua* coincided fairly closely with those of *T. ni*, which may indicate a common origin. *P. unionalis*, with nearly 80 examples, did conspicuously better than usual, and *H. livornica* with seven did well; but the long distance sub-tropical immigrants did not appear.

In judging the season as a whole, it needs to be remembered that the high numbers recorded of both the scarce and the common immigrants were probably somewhat raised by the generally good conditions for trapping and observing, and certainly by a large increase in the numbers of recorders, whose names are given as far as possible in Annexe I. To all of these the authors wish to offer their thanks and congratulations. We are particularly grateful to those who have supplied detailed records from continuously run light traps, and also to those who have them from others in their area.

(To be continued)

IN SEARCH OF *EURYNEBRIA*

By DAVID R. COPESTAKE*

I first saw *Eurynebria complanata* L. (or *Nebria complanta* L. as I believe it has now reverted to) in the Coleoptera collection of the National Museum of Wales in Cardiff. I was immediately impressed by it and was told that it could be found along the banks of the Ogmore river near to the sandhills of Merthyr Mawr Warren, to the East of Porthcawl, Glamorgan. The old county list of the Coleoptera of Glamorgan (1912) says of this beetle. "This is one of the finest and most interesting of our local Coleoptera".

Eurynebria is a large Carabid about 18-20mm long and is a light sandy colour with variable black markings on the elytra. They are well camouflaged when seen on a sandy shore covered in debris, and when encountered in large numbers (I have seen over 60 together) they are the sort of insect to give the non-entomologist the creeps, as they dash quickly over the sand.

It took me and my two boys four expeditions in search of *Eurynebria* before we found the beetle, and then we found dozens of them. Their preferred place of refuge has now changed from under old logs washed up on the shore, to rusty and battered oil drums which are full of nooks and crannies. Crowds of them will gather under one old drum. Their favourite food is yellow sandhoppers.

The Ogmore river winds its way to the sea near the village of Ogmore-by-sea, and Merthyr Mawr Warren is on the opposite side. Our first expedition was through the sandhills to the river side, and then along the river nearly to its mouth. It is fairly hard walking on the soft sand and with so many interesting beetles to be found on the way, the journey takes a long time. Following a dry stream bed in the summer of 1981 we eventually got to the Ogmore river to find the banks very muddy. At high water mark, which in places was 100 yards from the river, we looked under seaweed and old bits of wood and logs. All to no avail, there was no sign of a yellow and black Carabid. The large black *Broscus cephalotes* L. was very common, together with some smaller beetles, but not the prize we searched for. After reaching nearly to the mouth of the river we turned back hungry and tired. Our second expedition was on the opposite side of the river where one can get down near to the river in a car. This saves the long trek through the sandhills. However, *Eurynebria* was clearly not to be found on that side, there was to be no short cut to finding him.

In the summer of 1982 we heard from the University Zoology Dept. that *Eurynebria* could be found further along the coast at a place called Kenfig dunes, and so one afternoon I took my youngest son (aged 9) on an expedition to find it. However the dunes at Kenfig seemed wider than at Merthyr Mawr and looked very easy to get lost in. We took a straight line to the sea, and after finding many new and interesting beetles on the way, even-

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tually found it. Unfortunately, evening was drawing in and we could only spare twenty minutes on the beach before we must make our return journey. We looked under hundreds of stones in that short time (where we had been told we could find them), but no *Eurynebria* was to be found.

Not daunted, we decided to have a full expedition at Merthyr Mawr, and take plenty of food and orange squash with us. We picked a warm sunny day in July and set off for the day visiting our carrion traps in a wood on the way. I decided to trek through the sandhills in a more westerly direction in order to reach the coast beyond the mouth of the river Ogmore. This entailed 1½ - 2 miles up and down the high dunes. We encountered many species of beetles on the way, *Cicindela maritima* Dejean (what we call the sand-tiger, which is very hard to catch), the black and white weevil on small poplars *Cryptorhynchus lapathi* L. the chafer *Anomala aenea* Degeer the black *Phylan gibbus* Fab. crawling on the sand, and the small hollows in the dunes provided natural beetle traps and my two boys crawled around them on hands and knees picking up minute specimens of one species or another.

Eventually we neared the coast line, and there the dunes towered some 200 feet high. From the tops there was a magnificent view and it was like a scene from a film in a foreign desert. We could see debris which very high tides had carried into the dunes and our excitement rose. We looked under all manner of debris as we made our way to the shore line. Then, some 50 yards from the beach, just as the dunes came to an end, there I found two of the yellow Carabids as I lifted up a large piece of plywood. We had found their habitat at last! Overjoyed, I popped them into the collecting jar. My two boys looked around eagerly — I had offered them a 50p reward for finding the beetle! I soon found four more under some wood, and then Stephen (aged 11) shrieked with delight, "Come quickly, there are hundreds of them, they're running all over the place." He had turned over a rusty and battered oil drum and there underneath must have been over 60 *Eurynebria*. We collected a few, and watched them for a while before putting the drum back carefully. Our expedition was successful, we had found our prize at last!

This part of the beach was covered with debris, brought down by the river, and is a place where a sandy beach merges with the dunes. It was worth the search to find this beetle at last, and we made the way home very happy after a good days outing.

CLOUDED YELLOW AND DUKE OF BURGUNDY FRITILLARIES IN CUMBRIA. — During the first two weeks of August, 1982, at least two near-perfect specimens of *Colias croceus*, were seen feeding from flowers along the tow-path of the Lancaster Canal, between Crooklands and Stainton, grid reference SD 5285. Perhaps it is also of interest to note that elsewhere in Cumbria, earlier on in the year, about 10 specimens of *Hamearis lucina* were seen in an area densely covered with primroses and cowslips. — DAVID C. HOCKIN, 12 Starling Close, Runcorn, Cheshire.

SOUTHERN EUROPE IN 1980

By W. J. TENNENT*

Part 1 : Corsica and Elba

Spurred by the accounts of collecting trips made in the 1960s by Bretherton, de Worms and Greenwood, I visited Corsica during July 1980 in the hope of obtaining some of the endemic butterflies for which the island is renowned. Unfortunately the weather, which cannot be relied upon nowadays even in Southern Europe in July, was not at it's best and collecting suffered accordingly. This, together with the fact that this was a late season, resulted in very mixed fortunes.

The first stop of any entomological note after leaving England was the night of 7th July where, after driving through pouring rain for most of the day, I stopped at 1090m on the Col de la Croix Haute (Isere) in Southern France. There I was introduced for the first time to some of the small and very attractive 'tiger' moths among the surprisingly large number of moths attracted to the MV trap in the persistent drizzle. It may be appropriate here to mention that, although I had with me a trap and generator and caught a large number of moths, they figure little in this account simply because many remain unidentified for the moment. There is a dearth of reasonably priced up-to-date literature to aid identification of European moths in the English language; it may be that this goes some way to answering the question posed by C. L. Nissen in his letter to the Editor (Vol. 94. (5-6) p.88)?

The rain continued all of the following day as I motored south through Digne to Cannes and then west toward Marseille. No butterflies were seen; the only ray of sunshine was the ready availability of good coffee which makes such a pleasant change from the coffee generally sold in England (no wonder we English drink so much tea). However, the following day dawned dry and by 10 o'clock the sun shone weakly although a fresh breeze was blowing. The morning and early afternoon were spent between 400 and 725m on the slopes near the Col de L'Espigoulier a few miles to the east of Marseille. Butterflies were by no means plentiful. *Vanessa cardui* and *Gonepteryx cleopatra europaea* were not uncommon and a single *Fabriciana adippe* was netted. On a small peak at 725m, small numbers of *Coenonympha dorus*, *Plebejus argus* and *Nordmannia esculi* were to be found resting in the short grass amongst the rocks. They were not easily disturbed and when they chose to fly were whisked away by the wind, making collecting frustrating, if rather sporting.

I drove to Marseille later that afternoon to catch the ferry and after an uneventful crossing, arrived at Ajaccio early on the 10th of July. The intention was to head directly into the mountains around Vizzavona but a heavy mist obscured all but the very base of the mountains. Although conditions seemed ideal, a look around the

lower ground during the morning produced no butterflies at all, even in some flowery fields at sea level. During the drive up into the mountains at midday only a single *Papilio* was seen crossing the road some distance in front of the car. The weather in the mountains was miserable; the Col above Vizzavona was shrouded in mist with visibility reduced to only a few yards. At Vizzavona itself the mist cleared during the afternoon and although the sun remained hidden, a few very dark *Lycaena phlaeas*, one or two *Celastrina argiolus* and several *Polyommatus icarus* were disturbed in the wet grass near the village railway station. A worn male *Lasionommata megera paramegera* was also captured in the same area.

The next day dawned overcast but by mid-morning the clouds had gone, the sun was shining brightly and the only hinderance was a fairly gusty wind. The short grass and many flowers around the old Genoese fort above the Col de Vizzavona proved a lucrative area although it soon became apparent that many butterflies were just emerging. Two *Coenonympha corinna* and three male *Plebejus argus corsica*, all in very fresh condition, were taken near the fort as were several *L. megera paramegera*, past their best. Slightly higher up a single *Aglais urticae ichnusa* was found resting on the bare ground; there were a few *Artogeia napi meridionalis*, *Pararge aegeria*, *Lepitidea sinapis* and the odd *Colias croceus*, including form *helice*. A single *Psuedophilotes baton* was taken and one *Inachis io* seen. A climb to a mountain summit at 1500m yielded nothing other than a number of *V. cardui* but the climb was enjoyable and the view from the top magnificent.

The following two days were mainly spent in the same area. On the 12th it rained for most of the day but the 13th dawned fine and dry and both *C. corinna* and male *P. argus corsica* were to be found in small numbers, though a careful search failed to turn up a female of the latter. *C. croceus*, *P. icarus* and *A. napi* were common as was *L. megera paramegera*, mainly chipped. Several *A. urticae ichnusa* were seen but were not easy to net as most seemed to be merely 'passing through' and I climbed again to the high point at 1500m, mainly for the view and to take some photographs. Around the summit careered a *Papilio* which I assumed, probably because of it's fresh condition, to be *P. machaon*. I sat on a rock and watched it for some time until it settled on a patch of bare ground and it was only when I was in striking distance that I realised it was a male *P. hospiton*. This and another rather more worn male caught five minutes later in the same place, constituted the only records of *P. hospiton* and indeed of almost any *Papilio* whilst in Corsica.

The 14th of July dawned bright again and I was pleased to find my first Striped Hawk Moth, *Celerio livornica* amongst the more usual *Hyloicus pinastri* in the trap. *C. corinna* and *P. argus* were now in fair numbers above the Col and, moving to slightly lower levels to escape the wind, I stopped just below 900m where the narrow guage railway crosses the road and disappears into a tunnel above Tattone. I walked the mile or so along the track into Tattone;

the banks on either side were overgrown and supported plenty of flowers and trees, ideal for the fair numbers of *C. argiolus*, *L. sinapis*, *A. napi* and *Maniola jurtina*. *P. megera* was common although almost all were females, in contrast to the area only 300m higher where almost all were males (I only saw three females above the Col throughout my stay). There were many *P. icarus* flying with small numbers of *Lampides boeticus* and one or two *Issoria lathonia* but only two male *P. argus* were seen. A very brightly coloured Satyrid disturbed from between the railway lines disappeared into the undergrowth 50m further along the track and turned out to be *Hipparchia neomiris*, the only example seen although a careful search both then and again two days later was made. I ran the trap in the forest near Tattone that night and was visited by a local gendarmarie patrol who after a very cautious approach and much gesticulation, eventually decided that I was probably harmless and left me to ponder, not for the first time, why I don't have a consuming interest in stamps!

The 15th of July was my last full day around Vizzavona and the Col; *C. corinna* was now very common on the rough ground and on the grassy slopes nearby. I found the first female *P. argus* in mid morning and a further three during the day, *A. urticae* was to be found in small numbers at flowers below the ruins but little else of interest was noted. The following day both sexes of *P. argus* were quite common and I was able to take a good series of females before driving again to Tattone where only those species noted on the visit two days earlier were flying.

I set off in the direction of Bastia without having seen sign of *Fabriciana elisa* and stopped in mid morning at 500m in an open area on the edge of a forest near the village of Francardo. There I saw (but did not catch) a single *Papilio* (*machaon*?), flying with several *Polygonia c-album*, *Pandoriana pandora*, *Hipparchia aristaeus* and *Pyrgus amicanus*. A field full of pink thistles growing in some cases to shoulder height was the home of a large colony of *Brintesia circe* and very large numbers of *V. cardui* including some extremely small specimens of the latter which when seen on the wing were at first unrecognisable as that species. Forewing lengths of *V. cardui* here varied from 17mm to 34mm! A single fresh but badly damaged *Argynnis paphia immaculata* was seen and a small colony of fresh *Everes alcetas* was found near a marshy area flying in the company of *P. icarus*, *Pyronia tithonus* and *M. jurtina* were to be found in moderate numbers along the hedgerows.

The following day, 17th of July, it rained all day and I took the opportunity to look around Bastia and to book my ferry for the Italian mainland the following day. In so doing I learned that the ferry stops at Piombino and leaves again almost immediately for Elba, a journey which could be booked with minimal extra cost and I decided to spend a day on the island. The next day was dry but dull and the only butterflies to be found flying in an area close to sea level south of Bastia were *L. phlaeas*, *Coenonympha pamphilus*, *P. tithonus*, *Pyronia cecelia*, *C. argiolus*, *P. icarus*, *A. napi* and *M. jurtina*. A female of the last species was taken with almost

all of both hindwings white. I caught the ferry that afternoon and arrived at Portoferraio, on the north side of the island of Elba, about 9 o'clock that evening.

The next day was sunny and warm and although not too many butterflies were to be found on the hills around Procchio, *Gonepteryx cleopatra cleopatra* and *L. sinapis* were not uncommon. I caught large numbers of *Artogeia rapae* in the hope of finding *Artogeia manni* amongst them but didn't find any at all, whilst *Pontia daplidice*, *Thymelicus acteon*, *Carcharodus alceae* and *L. megera* of the nominate form were found in small numbers. Only two or three *Coenonympha elbana* were seen fluttering weakly over the rough ground at this low level but at 320m in similar surroundings on the slopes of nearby Mt. Perone, they were very common. The moth *Syntomis phegea* was also flying at this latter locality in very large numbers in the late afternoon. From the little I saw of the island it is most attractive and worthy of a longer stay in the future.

Part 2: Arquata Scrivia and the Alpes Maritimes

I left Elba on the 20th of July on the ferry to Piombino, drove up the west coast of Italy to Genoa and thence inland to the town of Arquata Scrivia, recorded by Baron de Worms (1960) and also recommended to me several years ago by Lt. Col. W. B. L. Manley, who said this was one of the best areas he knew for Lycaenids, an appraisal with which I was to agree completely. Having arrived in the town I found a track wide enough for the car, bordered on one side by a narrow stream and on the other by garden allotments stretching from the track to the slopes of a ridge. The opposite side of the stream consisted of flowery slopes and thick luxuriant grass and although it was almost 8 o'clock in the evening when I came to the end of the track at the head of the valley, a walk through the flowers disturbed one or two large blues which turned out to be *Meleageria daphnis*. The following morning I woke early and heard an irregular and very unusual bird call from the tree beneath which I had camped; the owner turned out to be a Golden Oriole, a bird which I had not seen before but of which I saw a lot that day and the next. The entomological wealth of the area soon became apparent. One of the first butterflies to appear was the large Satyrid *Minois dryas* which was common but difficult to approach. *Nordmannia ilicis* and *Strymonidia spini* were sparse and rather worn as was *Quercusia quercus* and among the other Lycaenids of the area were *Cupido minimus*, *Lysandra coridon*, *Polyommatus icarus*, *Everes alcetas*, *Aricia idas*, *Agrodiaetus escheri* and *Agrodiaetus ther-sites*. *M. daphnis* was common, all the females being of the blue form and *Maculinea arion ligurica* was in fair numbers, most of them very large and of a very attractive silvery blue.

The genus *Colias* was represented by *croceus*, *hyale* and *australis*, *Leptidea sinapis* was common on the track near trees overhanging the stream and *Leptidea duponcheli* rather less so. *Artogeia manni* was present among the numbers of *Artogeia rapae* and one or two very fresh examples of *Limenitis reducta* flew in the com-

pany of some battered brethren, remnants of an earlier brood. *Melitaea didyma*, *Clossiana titania*, worn *Brenthis daphne*, *Melanargia galathea*, *M. jurtina*, *Coenonympha arcania*, *Thymelicus acteon*, *Carcharodus flocciferus* and *Pontia daplidice* flew on the hillsides and at the top of the ridge I took a single *Papilion machaon*. In the wood at the head of the valley were *Argynnis paphia*, *Pararge aegeria* and several very fast flying *Nymphalis polychloros*.

I moved on the morning of the 23rd of July and took the autostrada with its many tunnels and picturesque viaducts, from Genoa until the French border where I turned off towards Sospel, heading for St. Martin Vesubie in the Alpes Maritimes. There was a fair amount of traffic on the mountain road and it was a while before I was able safely to park to investigate the identity of large Satyrids, commonly seen crossing the road. The butterflies were *Hipparchia alcyone* and were very common, flying up and down the mountain side, often pausing to sit on the hot road until disturbed by passing cars. *M. galathea*, *A. paphia*, *P. icarus*, *V. cardui* and *A. rapae* were to be found with singles of *A. mannii* and *Erebia ligea*. I did not stop for long but continued to St. Martin Vesubie where I took the right fork above the village to the valley of the Boreon where, around 1500m, *Parnassius apollo* flew commonly on the flowery slopes with *Erebia albertanus*, *C. arcania*, *C. titania*, *Mesoacidalia aglaja*, *Cyaniris semiargus*, *Plebejus argus*, *Paleochrysophanus hippothoe* and *Aricia artaxerxes*. Skippers included *Erynnis tages*, *Pyrgus malvae* and *Pyrgus alveus*. Higher on the mountain at 1900m, on rocky ground, flew a few *Erebia epiphron*.

The 24th of July was dull for most of the day, I returned to St. Martin Vesubie the next morning and took the left fork up the winding road to an area near the La Colmaine chair lift. The sun appeared occasionally but at least it remained dry. This was a rich area. *Coenonympha glycerion* was common and in fresh condition between 1600 and 1800m whilst among the common *Maculinea arion obscura* were to be found *Maculinea alcon rebeli*, mainly worn but obviously an established colony restricted to a very small area. *L. coridon*, *Heodes tityrus*, *Eumedonia eumedon*, a few *Lysandra bellargus*, several *Agrodiaetus amanda* and a single *Pseudaricia nicias* flew over the short grass with the odd *P. apollo*, *C. croceus* and the inevitable *V. cardui* (1980 was obviously a good year for *V. cardui* throughout Europe, it was to be found everywhere at all altitudes, generally in greater numbers than I have ever seen it). Slightly higher, around the station at the top of the chair lift, was *Lasiommata maera*, *E. epiphron*, *Heodes virgaureae*, *P. hippothoe* and *P. machaon*.

The following day, 25th of July, I decided to climb a high peak on the opposite side of the valley and set off early through the pine woods. *Erebia meolans* was flying quite commonly among the trees but not above 1800m, whilst *E. eumedon* and *L. phlaeas* were plentiful in the forest clearing. Above the tree line it was very windy and none too warm, no butterflies were flying although around a weather station at the 2220m peak and in a sheltered grassy hollow just below, they were to be found in reasonable numbers. *Colias phicomone* and *Pontia callidice* were found near the top, the for-

mer being far more tiring to catch than the latter; at least with *P. callidice* it was only necessary to select a suitable spot and wait for them to fly close whereas *C. phicomone* settled often and was easily disturbed, flying a further 20m, generally either straight up or straight down the hillside, even when approached with stealth! Two *P. machaon* dashed around the peak and *L. maera* was present but impossible to catch as they made no attempt to fly against the wind and were whisked away as soon as they were disturbed. Such was also the difficulty with *Hypodryas cynthia alpicola* around the hollow, though I fared rather better with *Boloria pales* which flew very close to the ground and settled on the short grass. The only *Erebias* found before the rain clouds put a stop to collecting were singles of *E. alberganus* and *E. pluto* and the last capture was a *Callophrys rubi* in good order.

I left the general area in very dull conditions on the morning of the 26th of July, the poor weather persisted until late morning when the sun shone for about two hours at which time I was just west of Digne. Here on the overgrown edge of a cornfield not far from the main road were numbers of *N. ilicis*, *Agrodiaetus ripartii*, *A. thersites*, *A. escheri*, *C. australis*, *M. galathea*, *L. duponcheli* and quite large numbers of *Satyrus ferula* which seemed to have a penchant for the tall purple thistles. I also caught specimens of *A. manni* and *Hyponephele lycaon*.

I arrived at Domene, a few miles east of Grenoble that afternoon in the hope of obtaining *Coenonympha oedippus* and *Maculinea telejus*, both recorded from the nearby marshes by Bretherton and de Worms (1953). A search produced nothing of interest although the next morning produced a few *Aphantopus hyperantus*, *M. jurtina*, *Erynnis tages* and a single *Araschia levana* of the summer brood. I came across a large area of long grass, thistles and the foodplant of *M. telejus*; *Sanguisorba officinalis* which was the most productive area, although neither of the species I was particularly searching for were found. However, there was a flourishing colony of *Everes argiades* and *E. alcetas*, together with enormous numbers of *A. hyperantus* and my efforts were rewarded with the capture of a *A. hyperantus* ab. *obsoleta* with no trace of ocelli on the underside and the merest pinpoints on the upperside forewings. It began to rain heavily that afternoon and the next day dawned similarly disappointing, in addition to which I had caught a heavy cold through sleeping out for so long in such damp conditions. I therefore decided enough was enough and headed for home.

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PAROCYSTOLA ACROXANTHA MEYRICK (LEP.: OECOPHORIDAE) IN SOMERSET. — In 1981, while staying for three nights at the house of a friend in the town of Yeovil, six moths of this species came to the actinic trap that I was operating there. Four appeared on the 29th May, and one on the 30th May. — G. H. YOUTEN, 16 Castle Avenue, Dover, Kent. [I have seen the specimens, having been shown them in Mr. Youden's collection. This appears to constitute a new record for Somerset and a marked extension of its known range in this country. Moreover, the early dates suggest these were first generation insects and that the species has at least two broods in England. — J. M. C.-H.]

HYMENOPTERA IN LATE 1982. — On the morning of New Year's Eve which was fine and sunny we were interested to see a large queen *Bombus* (sp.?) gathering nectar and pollen on our Winter-flowering *Erica* in the garden here and soon afterwards a queen *Vespa* (sp.?) was also observed flying around a dwarf *Chamaecyparis lawsoniana*. — T. G. HOWARTH, 'Highview', 4 Clinton Rise, Beer, Seaton, Devon EX12 3DZ.

THE APPEARANCE OF THE VESTAL IN THREE CONSECUTIVE YEARS IN CROYON. — In 1980 a male *Rhodometra sacraria* L. came to my Addiscombe trap and last year I reported three further examples and thought myself fortunate. This year on 25th September, I found in the trap a male and female of the same species and although *R. sacraria* has been observed widespread this year I find it very difficult to believe that this moth is making a habit of migrating to my part of the concrete jungle known as Croydon. Interestingly, the female is the smallest I have ever seen of this species, measuring only 21.5mm across the tips and I rather doubted its ability to produce ova. However, after much cossetting with sugar, water, honey, sherry etc. it laid 39 eggs. The imagines therefrom fed on dock and at normal temperatures, were full size, well coloured and with a strong tendency to aberration. With these almost regular arrivals of *sacraria* and the unusually small size of one specimen, do we possibly have a case for the presence of a local colony? I feel we have. — K. G. W. EVANS, 31 Havelock Road, Addiscombe, Croydon, Surrey CRO 6QQ, 10.xii.1982.

THE TIMING OF EMERGENCE OF PARASITIC
HYMENOPTERA OF *PIERIS RAPAE* (L.)
AND *PIERIS BRASSICAE* (L.)

S. C. LITTLEWOOD*

In December 1979, an aggregation of pupae of two species of *Pieris* was discovered, together with clusters of the cocoons of their parasite, *Apanteles glomeratus* (L.) (Braconidae), on a small east-facing wall, about ten yards distant from the vegetable garden of

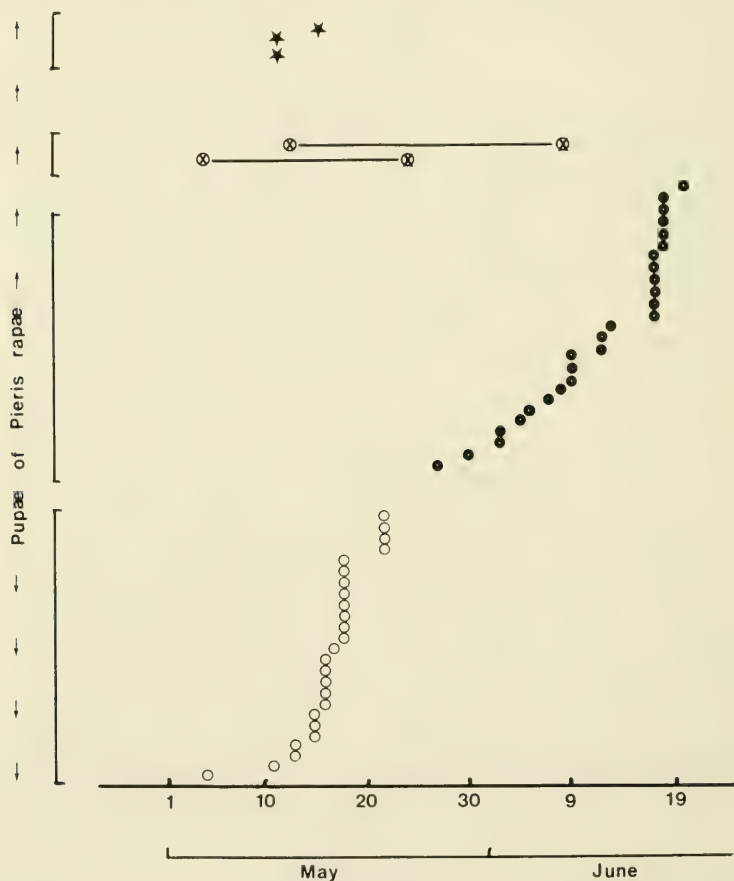


Figure 1. Species and dates of emergence from individual pupae of *Pieris rapae*.

★ = *Pimpla instigator* (Ichneumonidae). ⊗ = *Phryxe vulgaris* (Tachinidae).
⊙ = *Pteromalus puparum* (Pteromalidae). ○ = *Pieris rapae*.

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Melverley, Rowton, near Wellington, Shropshire. In all, 60 pupae of *P. rapae* (L.), 7 pupae of *P. brassicae* (L.) and 29 clusters of *A. glomeratus* were collected and placed in individual, corked glass tubes. The tubes were placed in an outhouse to ensure that the pupae maintained their obligatory diapause.

Emergences began on April 8th., 1980 and continued until June 20th. and the results are shown graphically in Figures 1 and 2. Of the 60 pupae of *P. rapae*, 25 were normal emergences, 26 produced a total of 997 *Pteromalus puparum* (L.) (Chalcidoidea, Pteromalidae) and three produced the solitary parasite *Pimpla instigator* (Fabricius) (Ichneumonidae). Two pupae produced the fly, *Phryxe vulgaris* (Fallen) (Tachinidae), while the remaining four failed to develop. The seven pupae of *P. brassicae* all emerged normally, while the 29 clusters of *Apanteles* cocoons gave rise to 422 *A. glomeratus*, 12 *Tetrastichus galactopus* (Ratzeburg) (Chalcidoidea, Eulophidae) and 256 *Lysibia nana* (Gravenhorst) (Ichneumonidae).

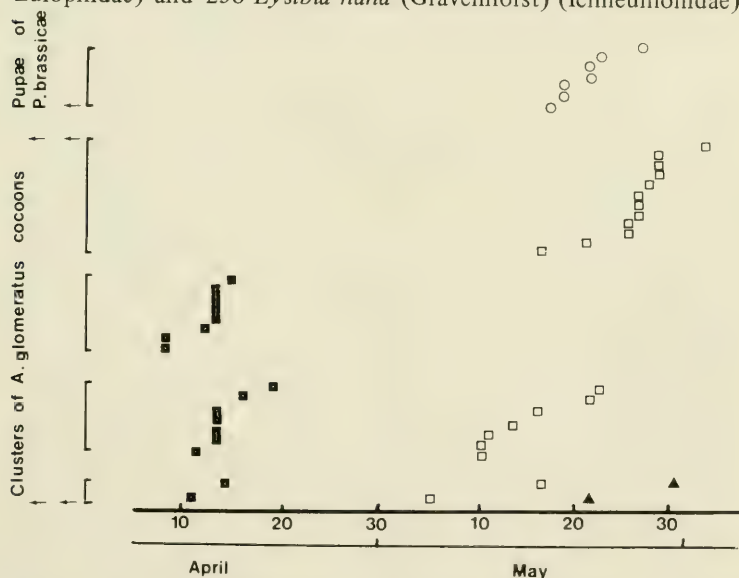


Figure 2. Species and dates of emergence from individual pupae of *Pieris brassicae* and clusters of cocoons of *Apanteles glomeratus* ex larvae of *P. brassicae*.

○ = *Pieris brassicae*. □ = *Apanteles glomeratus* (Braconidae).
■ = *Lysibia nana* (Ichneumonidae). ▲ = *Tetrastichus galactopus* (Eulophidae).

T. galactopus is a true hyperparasite, in that it attacks the *Apanteles* while they are still feeding inside the *Pieris*, whereas *L. nana* is a pseudohyperparasite, since it attacks *Apanteles* cocoons after the Pierid host is dead.

Figure 1 shows that, while the Ichneumons emerged coincidentally with the *Pieris* imagines, the adult Tachinids did not finally emerge until after this period, having formed their puparia some three weeks earlier. The Chalcids emerged well into what would be the next larval generation of *P. rapae*.

Figure 2 shows similarly that the pseudohyperparasitic phygadeuontine ichneumonid *L. nana* emerged very much earlier than either the adult *A. glomeratus* or the *Pieris* imagines, while, in two clusters, there was a late emergence of the truly hyperparasitic Chalcid *T. galactopus*.

Acknowledgements

I am most grateful to Dr. Mark Shaw, of the Royal Scottish Museum, for his advice and assistance, so generously given; and to Mrs Joan Nicklen of Rothamsted Experimental Station for practical help with the diagrams.

CELESTRINA ARGOLUS L. IN 1982. — The Holly Blue was comparatively plentiful in both spring and summer broods at Kew Gardens, Surrey during 1982. The spring brood was first seen on 24th April; 16 had been observed up to the 15th May, more than double that of previous years. The summer brood commenced in the middle of July and could be seen at the rate of 3-4 per hour during the last 10 days of July. This the first time the summer brood has been observed to be greater than the spring one. About 50 years ago a large ivy covered barn here was demolished, up to that time the Holly Blue used to occur almost in profusion year after year. — A. J. BALDWIN, 33 Defoe Avenue, Kew Gardens, Surrey.

THE ANGLE-SHADES IN JANUARY. — The exceptionally mild weather of late may have stimulated the early appearance of a fresh specimen of *Phlogophora meticulosa* L., found in West Wickham on the 13th January 1983, by my friend Mr. L. Keegan. — J. M. CHALMERS-HUNT.

LARVAE OF PHALERA BUCEPHALA L. (BUFF-TIP) ON ROSE. — Mr. B. K. West (*Ent. Rec.* 94: 198) discussing foodplants of this moth, writes "There are very few instances for the Rosaceae in general — Wilson. . . (1880) . . . mentions rose". Perhaps, therefore, I should report having come upon a colony of young *bucephala* larvae on the latter plant in my garden in July or early August 2 or 3 years ago. They were thickly clustered on a single spindly shoot which had grown up through a dense mass of honeysuckle, and which they had almost defoliated. Several days later they had evidently dispersed. Lime appears to be the usual foodplant of the species in this district (S. E. London). — A. A. ALLEN.

THE RED ADMIRAL: VANESSA ATALANTA L. IN NOVEMBER IN S. E. DEVON. — My wife and I were very pleased to see two perfect specimens of the Red Admiral flying and settling a few feet from one another and then sunning themselves on a stone wall near here at about 11.30 a.m. on 20th November 1982. The morning was bright and sunny with a shade temperature of approximately 48° Fahr. (9° Cent.) with a cool S. W. wind. The species was common with *Cynthia cardui* (L.) the Painted Lady during the Summer and early Autumn in the garden and neighbourhood. — T. G. HOWARTH, 'Highview' 4 Clinton Rise, Beer, Seaton, Devon EX12 3DZ.

SOME NEW BUTTERFLIES FROM TANZANIA
(LEPIDOPTERA: LYCAENIDAE)

JAN KIELLAND*

Abstract

Two species of Rhopalocera from Tanzania are described, *Ornipholidotos tanganyikae* sp. n. and *Alaena dodomaensis* sp. n.

Introduction

While examining my own collection of *Ornipholidotos* from Tanzania, there turned out to be two species in the series of *O. overlaeti* Stempffer. Both species were taken in forest remains in a comparatively restricted area, but strangely enough, the two species were never taken together in the same forest (see map).

Ornipholidotos tanganyikae sp. n. (Figs. 1 and 2)

Diagnosis. — Closest to *O. overlaeti* Stempffer, but *overlaeti* is whiter, more densely scaled and its hindwing marginal black band usually narrower and tapering towards tornus; in *tanganyika* the width of the band is quite even. The *tanganyika* male has a more prominent black patch at the end of the cell. The male genitalia differ considerably (see figs. A, B).

External characters. — Male; Length of forewing 19.5 mm.; wings, ground colour greyish-white; forewing black margin rather sparsely scaled, inner border somewhat uneven, broadest at apex, tapering towards tornus; costa black, inner border straight, not intruding cell (in *overlaeti* the black colour intrudes the cell in the basal area); there is a large, rounded black spot at the end of the cell, darker than the border. Hindwing distal margin with an evenly broad, black band, in one male 2 mm. wide, in the other 2.2 mm. There is a prominent black spot at the end of cell, darker than the margin. Underside as the upperside.

Female: Length of forewing 19 to 21.2 mm.; ground colour and markings as in the male; forewing a little more rounded.

Genitalia male. — (Fig. A) Uncus wide (broken in the preparation), composed of two rather unsymmetrically, divided lobes which protrude laterally; the tegumen (which is rather distorted in the preparation), is very large; special processes consist of two pairs of lobes, one small and a large pair, both pairs a little unsymmetrical; sternite almost symmetrically bilobed; aedeagus incurved near the dorsal end, vesica armed with fine cornuti.



Fig. 1 *O. tanganyikae*. Holotype male



Fig. 2. *O. tanganyikae*. Allotype female

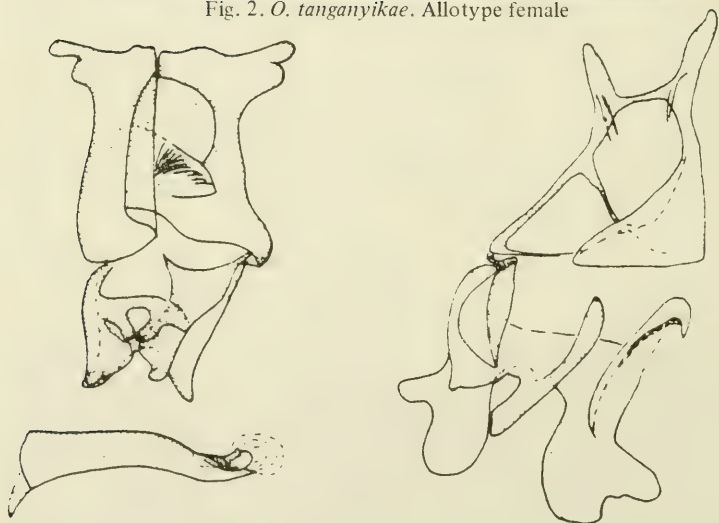


Fig. A. *O. tanganyikae*. Male genitalia

Fig. B. *O. tanganyikae*. Female genitalia

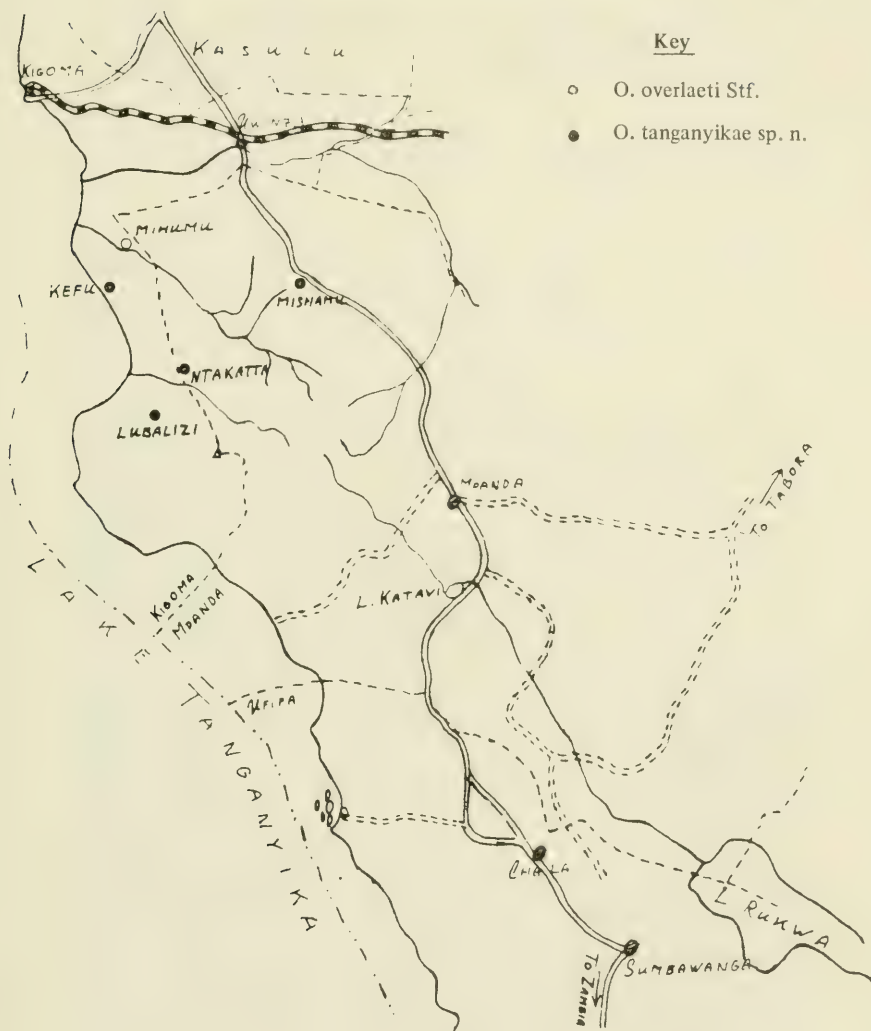


Fig. C. Map showing relative distribution of *O. tanganyikae* and *O. overlaeti*.

Habitat. — Riverine forests in half shade. The usual slow flight of the genus, settling on dry twigs, often several together. 900 to 1300 m.

Known flight period. — December and April-May.

Known range. — Lubalizi riverine forest and Kefu forest in Kigoma; Ntakatta forest and Mishamu in Mpanda.

Holotype male: Tanzania, Kigoma, Kefu for., 17-IV-1971, J. Kielland.

Allotype female: Same data and collector. Paratypes: Tanzania, Kigoma, Lubalizi, 18-V-1970, 1 ♂, 1 ♀; Kefu for., 13-IV-1971, 1 ♀; Mpanda, Mishamu, 7 & 8-XII-1979, 2 ♂, all J. Kielland.

Holotype and allotype to be deposited in the British Museum (Nat. Hist.), one male paratype to the National Museum, Nairobi, the rest in J. Kielland collection.

Alaena dodomaensis sp. n.

Related to *A. caissa* Rebl. & Rog.

External characters. — Male: Upperside ground colour blackish grey; white markings strongly reduced; forewing cell with two white dots; the discal row of spots in space 2 to 7 small and only a little paler than the ground colour. Hindwing almost uniformly blackish-grey, with indications of paler markings in space 2 to 5 of the discal row. Underside somewhat greyer than in *caissa*; forewing with white discal markings in space 2 to costa, but much shorter than in *caissa*; space 1 uniformly grey from base to the marginal spot; there are three white spots in the cell and a basal streak as in *caissa*, but smaller; hindwing markings almost as in *caissa*, but greyer and the white marginal spots a little larger than the submarginal spots, while in *caissa* the submarginal spots are longer than the spots in the marginal row. Length of forewing 12.4 mm.; antenna-wing ratio 0.505; in *caissa* 0.466 (But only one specimen is available of each species). Female: Ground colour as in the male, but light markings a little more pronounced in the forewing and clearly defined in the hindwing; the wings are considerably larger and wider. Underside forewing with a white discal spot in 1; otherwise as in the male. Hindwing marginal white spots considerably larger than the submarginal spots. Length of forewing 15.6 mm.; antenna-wing ratio 0.45; male-female antenna-wing co-efficient is 1.122.

Habitat: Settling on rocks in thornbush country.

Holotype male: Tanzania, Dodoma, 30-XI-1965, J. Kielland.

Allotype female: Same data and collector.

Holotype and allotype are both in the British Museum (Nat. Hist.) collection.

Acknowledgements

My thanks are due to the staff of the British Museum (Natural History). In particular to R. I. Vane-Wright, Philip Ackery and Rannik Arora for their help while studying the Museum collection and to the Officers of the Department of Wildlife in Tanzania for issuing permits to collect butterflies in Tanzania and for valuable assistance.

CALAMEUTA PALLIPES (KLUG)
(SYMPHYTA: CEPHIDAE),
A SPECIES AND A FAMILY OF SAWFLY
NEW TO IRELAND

By J. P. O'CONNOR and M. A. O'CONNOR*

On 12th June 1982 we collected a female adult of *Calameuta pallipes* (Klug) at Curracloe, Co. Wexford (Irish Grid Ref T.113270). The specimen was swept from vegetation on sand dunes adjacent to a marsh between 8 and 9 p.m. No other specimens were observed. This species has not been previously found in Ireland. It is the first representative of the Cephidae to be discovered in this country.

Curracloe is situated near the extreme south-east of Ireland, just north of the town of Wexford. At Curracloe, there is a moraine marking the point where the Irish Sea ice (Midlandian age) was temporarily stationary. Sand dunes backed by marshes and lagoons, lie inland. The calcareous marsh flora includes the water parsnip, *Berula*, and the water dock, *Rumex hydrolapathum*. The area has been classified as a site of scientific importance with regional significance (Anon., 1981). Nevertheless during our visit, it was evident that drainage of the marsh had commenced.

The adults of *C. pallipes* have been recorded from May to July. It is widely distributed in England and Wales. It also reaches central Scotland (Quinlan and Gauld, 1981). Dr. M. C. D. Speight (pers. comm.) has found it as far north as Kincardineshire. Abroad, it has been recorded from central Europe north to Sweden and Finland, south to Greece (Benson, 1951). The larvae have not been recorded but its congener *C. filiformis* (Eversmann) inhabits *Calamagrostis epigejos*, small stems of *Phragmites communis* and various grasses (Quinlan and Gauld, *op. cit.*).

When the above distribution is considered, it is surprising that *C. pallipes* has not previously been found in Ireland. No records of the Cephidae are cited in a manuscript list of the Irish Symphyta, compiled by A. W. Stelfox and R. C. Faris, now in the National Museum of Ireland. Recent collecting for sawflies in a wide variety of grassland types in this country had not revealed *C. pallipes* suggesting that it is unlikely to be widely distributed here. In southern England, the species is not infrequent in small damp patches (e.g. by ditches) within dry grassland (Speight, *pers. comm.*). There was grassland (with grazing cows) and a wet ditch near the site of capture of our specimen.

It is of some significance that Stelfox failed to find *C. pallipes* at Curracloe despite several visits. It is unlikely that such an experienced hymenopterist would have missed this distinctive insect. It is possible therefore that the species is a recent immigrant.

The specimen has been deposited in the National Museum of Ireland.

*c/o National Museum of Ireland, Kildare Street, Dublin 2.

Acknowledgements

We are very grateful to M. C. D. Speight for confirming our determination of *C. pallipes* and for his most helpful advice. We also wish to thank A. B. O. Riordain and C. E. O'Riordan for their help and encouragement with this work.

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The Red Admiral early in 1983

On January 8th 1983, a female *Vanessa atalanta* L. was observed at noon flying and basking near Plymouth. Strong and active. Rather tarnished. Shade temperature 43°F. At 12.25 a peacock was also seen. My notes show that *V. atalanta* has been seen in every month of the year over the last four years. I saw another female red admiral in excellent condition elsewhere in South Devon on January 15th 1983, in very windy conditions with a shade temperature of 53°F — A. ARCHER-LOCK, 4 Glenwood Road, Mannamead, Plymouth, S. Devon.

Whilst admiring some exceptionally early primroses in the Rewell Wood, near Arundel in West Sussex at noon today, I was astonished to be 'buzzed' by a red admiral, *Vanessa atalanta* L. in near mint condition. This seems to be further evidence that the species hibernates in this country with some degree of success. — E. C. M. HAES, 45 Grove Road, Worthing, W. Sussex BN14 9DQ, 13.i.83.

I was working in the garden this morning when suddenly there was a butterfly flying round me — the first of the season — it settled on the wall of the house on a climbing rose to sunbathe and I saw it was a Red Admiral! It must have been one of the ones we had last autumn and it must have hibernated — probably in the boiler house which has an unglazed window onto the garden. My last sighting of one last year was on 13th November. — Miss ELIZABETH WARREN, 31 Clifton Crescent, Flat 2, Folkestone, Kent CT20, 10.iii.1983.

I observed a Red Admiral on the 3rd March, an exceptionally warm and sunny day. It was on heather in the rock garden of the R.H.S. gardens at Wisley near Guildford, Surrey, about 2.30 pm. Surely not a migrant? — G. F. ARNOLD, Three Pines, Wisborough Green, W. Sussex.

NOTES CONCERNING CERTAIN WEST INDIAN BUTTERFLIES 113
NOTES CONCERNING CERTAIN WEST INDIAN
BUTTERFLIES

By JOHN G. COUTSIS*

In the period between 1952 and 1959 I was fortunate enough to spend my summers collecting lepidoptera on several West Indian islands. The totality of the material gathered there was deposited in the Peabody Museum, at Yale University, in New Haven, Connecticut, U.S.A.

The publication of the *Field Guide to the Butterflies of the West Indies* (Riley, 1975) and of Part 1 of the *Butterflies of the Neotropical Region* (D'Abrera, 1981), prompted me to present here a number of personal observations about some West Indian butterflies, which either do not quite agree with the opinions expressed by the authors of the two aforementioned works, or add new information about these butterflies.

1. *Prepona amphitoe* Godart: A single male captured and several other specimens observed in the El Yunque forest, in Puerto Rico. Not recorded by Riley from this island.

2. *Anaea johnsoni* Avinoff & Shoumatoff: The single male specimen taken by myself at Boutillier, Haiti, island of Hispaniola, was fresh, thus making it rather improbable that it was a chance vagrant from Jamaica, as suggested by Riley. Furthermore this butterfly does not possess any migratory habits.

3. *Hamadryas feronia* L.: Despite extensive collecting, I did not find this species in Haiti. Old records of it from that country probably refer to *Hamadryas februa* Huebner.

4. *Biblis hyperia* Cramer: I found this butterfly to be common in the xerophytic forests of St. John, Virgin Islands. This locality is not mentioned by Riley.

5. *Philaethria dido* Clerck: I did not find this species in Hispaniola despite extensive collecting. Old records of it from this area almost certainly refer to *Siproeta steneles* L. as suggested by Riley.

6. *Anteos clorinde* Godart: This species was found to be locally very common in the vicinity of the small town of Savannette, in eastern Haiti, near the border with the Dominican Republic. Recorded on several occasions and during different years, thus showing that it is well established there. Captured mostly at mud puddles. A series, both male and female, is deposited at Yale University. Neither Riley, nor D'Abrera, record it from Haiti.

7. *Phoebis editha* Butler: Quite abundant in the vicinity of Port-au-Prince, Haiti, but nowhere as common as *Phoebis sennae* L., which is sympatric and synchronic with it. D'Abrera considers the possibility of its being a localised and rare race of *sennae*, but in my opinion this butterfly is specifically distinct from *sennae* for the following reasons:

(a) The existence of anatomical differences in the genitalia.

*4 Glykonos Street, Athens 139, Greece.

(b) The fact that despite sympatry and synchrony, no intermediate forms have ever been recorded. (c) The fact that the larval food-plant is different. I was able on several occasions to rear *sennae* on *Cassia*, from eggs laid either in the wild, or in captivity. Never once did I manage to get *editha* to lay eggs on *Cassia*, nor did I ever see it laying eggs on this plant in the wild. (d) The fact that females of *editha* observed in copulo, were always found mating with males of this morph.

An extensive series, both male and female deposited at Yale University.

8. *Phoebis avellaneda* Herrich-Schaeffer: I never saw this species in Haiti in spite of extensive collecting in almost all parts of the Republic. Perhaps older records are erroneous.

9. *Battus zetides* Munroe: The few specimens I observed and the single male I captured, were all found singly, at a considerable altitude and patrolling a specific area. Both sexes with tails on HW, so, apparently, Riley's tailless figure surely refers to a damaged specimen.

10. *Papilio machaonides* Esper: I reared this species on several occasions from eggs laid in the wild on the leaves of *Citrus*. The larva is astonishingly similar to that of *Papilio cresphontes* Cramer, thus showing the very close affinity between these two species, despite rather pronounced superficial differences in the imago.

11. *Papilio homerus* Fabricius: Though reported from Hispaniola in the 19th century, the possibility of its being presently found in Haiti should be excluded, because of the total destruction of the forests.

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Obituary

T. D. FEARNEHOUGH. — It is with much regret that we have to record the death from lung cancer on the 22nd January, 1983, of T. D. Fearnough of Lymington, Hampshire. Born the 25th July 1911 at Sheffield, where he was employed as a metallurgist in the Admiralty, Mr. Fearnough contributed numerous notes and articles that were published in the *Record* from 1937 onwards. In 1961, he moved to Shanklin, and while there wrote an account of the butterflies of the Isle of Wight (in *Ent. Rec.*, 84: 57-64, 102-109). One of his most remarkable entomological achievements was the successful rearing of the Queen of Spain Fritillary: *Argynnis lathonia* L., from eggs laid by a female captured in 1949 by O. G. Watkins at Stoke Point near Plymouth (see *Ent. Rec.*, 61: 109-110). We understand his collection is to go to the Sheffield Museum. — J. M. C. -H.

Notes and Observations

ERISTALIS TENAX L. (DIPTERA: SYRPHIDAE) IN JANUARY. — It may be of interest to note the occurrence of a single female Drone-fly, *Eristalis tenax* L. feeding on the winter-flowing Jasmine blossoms in my garden at East Ham, Essex, (O.S. Ref. TQ 4282) on the rather early date of 3rd January, 1983, during a period of mild weather. The species is, of course, one which hibernates as an adult in various sheltered locations, this individual probably having emerged from my garden shed. — C. W. PLANT, Assistant Curator, Natural Science (Biology), Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

PANAGAEUS BIPUSTULATUS FAB. (COL.) IN GLAMORGAN. — Whilst searching a sandy area of the Merthyr Mawr Warren near Porthcawl (SS 872 767) which is covered with sparse grass and a few small poplars on the dull evening of June 22nd 1982, I discovered the pretty red spotted carabid *Panagaeus bipustulatus* running between the grass. This is not recorded in the old Glamorgan Coleoptera list of Tomlin (1933), and the National Museum of Wales has no record of it having been found before in South Wales. This would appear to be a new record for Glamorgan, and perhaps South Wales. The beetle is noted for a small square head with protruding eyes and a circular pronotum. The pronotum and elytra are covered in a fine golden pubescence which makes the insect very beautiful. — D. R. COPESTAKE, 5 High St., Gilfach Goch, Porth, Mid-Glam. CF39 8SS.

DORCATOMA CHRYSOMELINA STM. AND D. FLAVICORNIS F. (COL.: ANOBIIDAE) IN SUBURBAN KENT. — These two somewhat uncommon beetles are both noted as very rare in Kent in the VCH list for that county (Fowler, 1908), with one locality apiece: Tonbridge and Cobham Park respectively. I have seen no more recent records for Kent, but in any case it seems worth pointing out that both species occur in the extreme north-west of the county (S. E. London) — *chrysomelina* being *apparently* the more frequent. Of this, some half-dozen examples have occurred to me, singly and at longish intervals over a good many years, at m.v. light at Blackheath, and one or two more similarly at Charlton. Of *D. flavicornis* I have taken but one specimen in the district, on the trunk of a moribund hybrid poplar in a park at Charlton (18.vii.75). Perhaps my experience here reflects some unsuspected behavioural difference between the two species, but no such difference is detectable in ordinary collecting elsewhere. Both have their headquarters in the old forest areas where they are to be found not infrequently and sometimes together, in June and July, by brushing the foliage of ancient oaks, etc., where red-rotten wood is present, and may also be swept or found running on fallen branches. Fowler (1890, *Col. Brit. Isl.*, 4: 198) includes among his records of each species an old one for S. E. London.

The VCH entry for *Dorcatoma flavicornis* gives as the habitat "In fungi on trees" (unlike the data in '*Col. Brit. Isl.*' which are

virtually the same for both species). Tree fungi, however, are the development-medium not of *flavicornis* (nor of *chrysomelina* either) but of *serra* Panz. and *dresdensis* Hbst. — neither known to be British at that period — and also of the continental *punctulata* Muls. and *robusta* Strand (either or both of which might possibly yet be found here). Could, therefore, J. J. Walker's Cobham Park specimens of 1889 and 1895, or some of them, really have belonged to one of the other species just mentioned? Unfortunately, it seems unlikely that they could be traced after the lapse of a century. There appears to be no secure Kent record of *dresdensis* or *serra*, though the latter, at least, is now known to occur fairly widely. — A. A. ALLEN.

TISCHERIA ANGUSTICOLLELLA DUPONCHEL IN KENT. — During a visit to Thornden Wood, Whitstable on 11th September 1982, I found several mines of *Tischeria angusticollella* many of which had been parasitised. This is the first record for Vice County 15 and I believe only otherwise recorded in the West of the County from Chattenden. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

THE PRIVET HAWMOTH: SPHINX LIGUSTRI L. IN VICE COUNTY 16 (WEST KENT). — Apropos B. K. West's note in *Ent. Rec.*, 94: 242 on the apparent decline of this moth, I may say that while I was trimming my privet hedge here in 1982, I noticed a larva of this species, the first seen for many years. — W. G. ST. JOHN, 11, Vancouver Road, Forest Hill, SE23 2AG.

TELEIODES VULGELLA HBN. ON JUNIPER. — On the 8th May 1982, whilst beating Juniper bushes in Surrey, two small Gelechiid larvae were dislodged from an isolated bush. These fed up on Juniper needles and two specimens of *T. vulgella* emerged on 31st May. The normal foodplants for this species are *Crataegus* or *Prunus spinosa*. PAUL SOKOLOFF, 4 Steep Close, Orpington, Kent.

MOTHS ATTRACTED TO ROSE HIPS. — Recently I came across the note written by Dr. N. Birkett (*Ent. Rec.* 69. 75) in which he relates finding moths of two species only, *Conistra vaccinii* L. and *Eupsilia transversa* Hufn. attracted to rowan berries at Kendal, Westmorland, in October 1953, a time of the year when ivy bloom or sugar may bring a wide variety of moths for sustenance. On March 10th, 1961, I was collecting freshly emerged *Earophila badiata* Hbn. which were settled on the wild rose bushes at Eynsford, Kent, when in the torch light I noticed several Noctuid moths resting upon the hips which were largely black rather than orange; they were of two species — *C. vaccinii* and *E. transversa*. Subsequent searching revealed that many of the fruits had attracted moths, some of which appeared to be imbibing, and all were of these two species with the exception of two specimens of *E. badiata*. Two days before, the common *Orthosia*s and other early species had fallen in showers when near-by mature willows had been shaken, although very few *C. vaccinii* and no *E. transversa* were noted. It appears therefore that these two fruits at a certain stage of ripeness, while not attracting moths in general, may have a strong and selective attraction for *C. vaccinii* and *E. transversa*, one before and one after their hibernation. — B. K. WEST, 36 Briar Road, Bexley, Kent.

SATURNIA PAVONIA (L.) IN ASSOCIATION WITH POTENTILLA PALUSTRIS (L.) SCOP. IN WEST CUMBRIA. On reading the note by Dr. P. D. Hulme regarding the foodplant of *Saturnia pavonia* (*Entomologist's Record*, 93: 153) it prompted me to record the following brief observation. While searching for the weevil, *Phytobius comari* (Herbst) on Williamsons Moss, Eskmeals, SD09 on 26 June, 1982 I came across several large larvae (possibly final instars) of *S. pavonia* which were feeding low down on the leaves of a few individual plants of *Potentilla palustris* (L.) Scop. (Marsh cinquefoil). The larvae were quite difficult to detect at first while on the plants as the colour of the body resembled very closely that of the foliage. *P. palustris* was the dominant plant in the open areas on the moss, with smaller communities of *Potentilla erecta* (L.) Rausch, *Calluna vulgaris* and *Erica* sp. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF. 22.xii.1982.

CROCIDOSEMA PLEBEJANA ZELL. IN KENT. — On 9th. September 1982 a specimen of *Crocidosema plebejana* Zell. was captured in my garden m.v. trap. This species is normally confined in the British Isles to the Scillies and South-West England where it feeds on *Lavatera arborea* (Tree Mallow). It would seem probable that my specimen was an immigrant, as an example of *Spodoptera exigua* (Hübner) was captured on the same night. — P. J. JEWESS, Boyces Cottage, Newington, Sittingbourne, Kent ME9 9JF.

THE NI MOTH AND OTHER INTERESTING LEPIDOPTERA IN 1982. — On the evening of 18th September 1982, I accompanied Bernard Skinner to the Peacehaven area, Sussex, where we met Mr. C. Pratt prior to working an area of agricultural land for *Triphoplusia ni* Hb. Shortly after dusk on the first inspection of a series of MV lights being run, one female *T. ni* Hb. was taken. What promised to be a most interesting evening after this record, was thwarted by the arrival of heavy mist and a drop in temperature. No other moths of note appeared that evening, but my MV trap kept producing the same two butterflies, one *Cynthia cardui* L. and a *Vanessa atalanta* L., despite repeated efforts to lose them in a nearby hedge. The *T. ni* Hb. was retained by Mr. Skinner in an attempt to obtain ova, but without success.

The MV trap in my garden produced the first specimen of *Autographa bractea* D. & S., that I have seen in the area, on the night of 31st July/1st August 1982. With it in the trap were about 75-100 *Autographa gamma* L. Two nights later, together with a reduced number of *A. gamma* L., I found a worn specimen of *Eurois occulta* L. It was a mid grey hue consistent with the continental form.

In mid. September I noted a steady arrival of specimens of *Ennomos autumnaria* Wernb. at light. Some seasons pass here without any records of this species. At the same time, the first specimens of *Rhyacia simulans* Hufn. arrived. Probably about a dozen moths, and I have not noted this species here prior to 1982. — D. E. WILSON, Joyce House, Green Tye, Much Hadham, Herts. SG10 6JJ.

THE BROWN-TAIL: *EUPROCTIS CHRYSORRHOEA* L. AND SCARCE BLACK ARCHES: *NOLA AERUGULA* HBN. IN S. E. YORKS IN 1982. — By midnight on 13th July, 1982, a slight offshore breeze had brought very cold air down the cliffs at Flamborough, near Bridlington, and few moths were coming to the m. v. lamp. I was about to switch off the generator when a male *Euproctis chrysorrhoea* settled on the sheet, so I stayed a little longer. Five or ten minutes later my attention could not fail to be drawn to a tiny, white moth, eight or nine feet from the lamp and flying on a steady course from the beach with no intention of stopping. I netted it, expecting a micro, but on examination realised it was one of the Nolidae. The fore-wings were entirely white, having only the faintest trace of a grey submarginal line, but the three raised scales were prominent. The following morning I confirmed that it was *Nola aerugula* and as it sat quietly all day and seemed to tolerate being moved, I decided to photograph it. Alas! It escaped and vanished within seconds. Although the room was besieged for several days, it never even appeared in the window and I must confess that I now possess neither specimen nor picture.

Following the first capture in Yorkshire two years ago, at Spurn (*Ent. Rec.* 94. 99), this is now probably the most northerly record of *N. aerugula* in Britain. Up to 1981, seven *E. chrysorrhoea* had been seen this century in Yorkshire: all were coastal and five appeared on 16th July, 1973 (*Yorkshire Naturalists' Union, Annual Report*, 1973). It is perhaps more than coincidence that, on that date, the only county specimen of *Meganola albula* D. & S. (Kent Black Arches) accompanied three of them into my garden trap near Filey. — P. Q. WINTER, West End Farm, Muston, Filey, N. Yorks, YO14 0ES. [Mr. Winter's *aerugula* appears to conform to *ab. candidula* Stdgr. — J. M. C.-H.]

POLYDESMUS ANGUSTUS LATZEL (DIPLOPODA: POLYDESMIDA) FEEDING ON CARRION. — During a stay in Haltwhistle, Northumberland, in November 1982 one of us (JR) had occasion to examine the corpse of a red squirrel, *Sciurus vulgaris* L., which had been flung onto a rocky outcrop of a quarry. The squirrel was killed and brought to the house by a cat on 1 November when it was disposed of on the quarry. On 2 November the corpse was examined and was found to be covered with very large numbers of Polydesmid millipedes. All parts of the squirrel, including the tail, were covered with millipedes at various stages of development. The weather and soil were damp, and the area was overgrown with grass, nettles and willo-wherb. A sample of the millipedes was preserved in alcohol. The specimens were examined by YZE and it was found that all the identifiable specimens belonged to the common species *Polydesmus angustus* Latzel. Also present were several specimens of the woodlouse *Oniscus asellus* L., one light-coloured aphid and a few small Staphylinid beetles.

The presence of this species on a corpse is interesting, as Polydesmids are generally regarded as being feeders on decaying vegetable, rather than animal, matter; *P. angustus* is, in particular, associated with cultivation. These observations are also of interest in

the field of forensic entomology where the succession of insects and other arthropods is of use in attempting to determine the time of death. Further observations on this point would be of interest. Y. Z. ERZINCIOGLU and J. RICHARDSON, Department of Zoology, University of Durham, Science Laboratories, South Road, Durham DH1 3LE.

EUXOA CURSORIA HUFN. IN MID-KENT. — On 3rd. August 1982 a male specimen of *Euxoa cursoria* Hufn. in excellent condition was captured in my garden m.v. trap at Newington, N. Kent. I believe that all the other confirmed Kentish records of *E. cursoria* are from G. H. Youden at Dover and this would constitute the first inland record for this species. — P. J. JEWESS, Boyces Cottage, Newington, Sittingbourne, Kent ME9 7JF.

APATELE EUPHORBIAE F.: ONE NIGHT OF ABUNDANCE. — On August 4th, 1974, near Fanore on the coast of Co. Clare I operated my m/v light on the open limestone hills overlooking the coastal road. The night was mild and somewhat illuminated, despite a little patchy cloud, by a near full moon in the eastern sky. Having seen *A. euphorbiae* but once previously, a specimen at Aviemore, I was amazed to find this insect arriving at the sheet in embarrassing numbers: sixteen were recorded definitely but there must have been over twenty, mostly in excellent condition, and so far as I could tell all males. Only one other species arrived in quantity, that being *Selidosema brunnearia* Vill., mostly males and also in good condition, although surprisingly the three females seen were ragged.

The light was in operation at the same place the following night, under seemingly not dissimilar meteorological conditions, but whereas *S. brunnearia* was again much in evidence, *A. euphorbiae* did not appear, and it may be added that of those seen the previous evening less than half were taken. — B. K. WEST, 36 Briar Road, Bexley, Kent.

THE DEATH OF A BUTTERFLY. — This day, 22 August 1962, was one of the few, warm, sunny days of a dreadful August. A female brown hairstreak had hatched in my study on 21 August. I put it in a pill-box and at 14.30 hrs 22 August I went out with my youngest son, aged nine, to release her at the spot where I had found her as an egg. This egg, and 24 more, I had found in September 1961 by watching her dam lay on little, stunted sloe bushes on the edge of Kimpton Down Wood, 2 miles from my home.

All through the long, cold winter of 61/62 this small white egg had remained glued to the sloe twig on which I had found it. I had kept it in my cellar. In May, when the first young leaves appeared on the sloe bushes, the egg was placed in warmer surroundings. Soon the very small larva emerged and took its first meal of sloe leaf. It thrived, pupated, and then appeared as a perfect butterfly. I released her at the exact spot where I had first seen her mother. She fanned her lovely orange and black wings several times, and then took her first flight. With astonishing speed she mounted to the top of a tall oak tree; the same tree to which I had seen her mother fly after a bout of egg laying: a remarkable fact.

While watching the oak tree to see if I could see my brown

hairstreak again, I noticed a dozen or more purple hairstreak flying round the top of a neighbouring oak. Soon I saw some much lower down, and shortly took two very worn females as they sipped nectar from bramble blossoms at the foot of the tree. When released they quickly mounted to tree-top height. Then, suddenly, I saw one purple hairstreak start coming earthward. It pitched on oak leaves several times, but seemed not to have the strength to hang on to the leaves, shaken by a brisk breeze. Slowly it fluttered ever lower and collapsed in the grass at my feet. I let it cling to my finger and examined it. It was a very worn and tattered male. Soon he fell from my finger and expired in the grass. I imagine the sight of his fellows, playing in the warm sun, had made him try one last fling. But old age had caught up with him: he just had no strength left in his little body. So his short, gay and charming dance of life had come to its appointed and apparently painless end.

Thus my young son, so early in his life, had learnt the orderliness, the inevitability, and the kindness of nature. I was left wondering how seldom it must be that one is fortunate enough to witness the death, from old age, of a tiny butterfly. — Brig. E. C. L. SIMSON, 4 Durnford Close, Chilbolton, Stockbridge, Hants. 9.xii.1982.

ZERINTHIA RUMINA L.: A SECOND BROOD, AND OTHER INTERESTING BUTTERFLIES IN SPAIN. — On the 14th September 1982, we visited a coastal locality in the Province of Granada, Spain, in which we encountered four fresh imagines of *Z. rumina*, which must represent a second generation; an event for which we have been unable to find previous reference.

The locality was all the more interesting for we observed two examples of *Danaus plexippus* L. and four of *D. chrysippus* L. In condition they varied from fresh to very worn, and the presence of some *Asclepias* species suggested local emergence. Other butterflies noted included *Gegenes nostrodamus* Fabricius and *Zizeeria knysna* Trimen. — SHEILA and DAVID HOWELL, 12 Harrow Dene, St. Peters, Broadstairs, Kent.

EPIPHYAS POSTVITTANA WALK. NEW TO KENT AND THE LONDON AREA. — An unfamiliar Tortrix taken at my m.v. lamp here on 1st June, 1982, was tentatively named much later from Bradley, Tremewan & Smith (1973, *British Tortricoid Moths*, 1) as the above species; it is a male in very fair condition. Of the four examples figured it most resembles fig. 15 (pl. 32), but the forewings are redder in tone and rather more variegated, besides other minor differences. At the recent Verrall Supper, through the kind offices of Lt.-Col. Emmet, I was able to show the specimen to Mr. E. C. Pelham-Clinton, who with two expert colleagues obligingly confirmed it as *E. postvittana*.

This native of Australia has been established in south-west England, chiefly west Cornwall, for about half a century; it has occurred also in Devon, and once in Hampshire (*op. cit.*: 127). I am informed that it has recently been taken in Essex, but the present capture appears to be the first in Kent or the London suburbs. It is clear that the species has lately been spreading eastwards. — A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

NEW VICE-COUNTY RECORDS OF RHIZOPHAGUS SPECIES (COL., RHIZOPHAGIDAE). — I have in my collection the following species from vice-counties not listed in the distribution given by Peacock (1977, *Handbk. Ident. Br. Insects* 5(5a)).

Rhizophagus depressus (F.), Slindon Common, West Sussex (VC 13), 23.v.1969, under bark of unidentified conifer stumps; *Rhizophagus nitidulus* (F.), Brampton Bryan Park, Herefordshire (VC 36), 21.v.1980 and Reddings Inclosure, Forest of Dean, Monmouthshire (VC 35), 31.v.1980, in both cases under the bark of fallen oak. — J. COOTER, 20 Burdon Drive, Bartestree, Herefordshire, HR1 4DL.

THE DRINKER: PHILUDORIA POTATORIA L. IN JANUARY. — On the 9th January 1983, Mr. David Blake, a member of the "Mid-Sussex Breakers Entomological Group" found a male Drinker Moth on the pavement outside St. Francis Hospital, Haywards Heath. Although nearly dead when found, it was in perfect condition having apparently recently emerged. I have since seen the specimen which is a pale example, but of about average size with a wing span of approximately 52mm. — T. NEWNHAM, The Victory, Staplefield, Haywards Heath, Sussex RH17 6EU.

EARLY APPEARANCE OF THE HEATH FRITILLARY: MELLICTA ATHALIA ROTT. IN 1982. — I found this butterfly on the wing in the Chestfield area of North Kent on 1st June 1982, in a rather patchy partly overgrown clearing mainly of sweet chestnut coppice. At least a dozen were seen, including several females. As quite a number were already fairly worn, the indications are that the insect started emerging about the 25th May. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

OBSERVATIONS ON THE SMALL WHITE: PIERIS RAPAE L. AND AN ABERRATION. — In July 1982 while looking over numerous Small Whites on a nearby allotment, I noticed a pair *in cop.* that were flying strangely. The male was dangling from a hair-like cord attached to the female and spinning round. On closer observation, the female was seen to be aberrant, with a bold spot between the two forewing spots. I carefully took them home, put them in a cage with flowers and a choice of foodplants. I expected that in due course they would part naturally, but they were still joined together the following morning sitting on the cage muslin. The cord was about ½ inch long, so I decided to separate them and cut the cord about midway. Despite this, later on that day I was surprised to see the female actively depositing (on the underside of leaves, chiefly of Hedge Garlic: *Alliaria officinalis*). She died the following morning having deposited about 130 eggs. From these, the aberrant form in the F1 generation ranged from a light dusting of dark scales between the forewing spots, to a bold spot of the same size as the other two, and in one case a light dusting of scales carrying on to the apical blotch (ab. *fasciata* Tutt). Further matings produced many eggs, but the resulting larvae were not healthy, feeding was extremely slow and many have died. Notwithstanding this however, I have some pupae and one hopes to carry on the aberration in 1983. — J. H. PAYNE, 10, Ranelagh Road, Wellingborough, Northants, NN8 1JG.

LEPTURA SCUTELLATA FAB. (COL., CERAMBYCIDAE) ON THE SURREY/BERKS. BORDER. — Windsor Forest in Berkshire is generally given as a good locality for this longicorn. Therefore it was not too much of a surprise to find one in flight at Virginia Water on 7.vi.82 near to but outside the entrance of Windsor Great Park. However, Kaufmann (1948, *Entomologist's mon. Mag.*, 84: 66-85) does not record it from Surrey and there seems to be no such report since. — D. PRANCE, 23 Brunswick Road, Kingston Hill, Kingston-upon-Thames, Surrey.

AN EARLY MACROGLOSSUM STELLATARUM L. — During a sunny spell on a cold morning on 5th. April, 1983 I was greatly surprised to see a Humming-bird Hawkmoth, *Macroglossum stellatarum* L. flying in my garden. The moth inspected polyanthus in flower and a flowerless fuchsia (which attracted several last autumn) but soon flew off at high speed. The moth must have been hibernating near-by. — R. C. DYSON, 58 Stanford Avenue, Brighton, E. Sussex, BN1 6FD.

NOTES ON VANESSA ATALANTA L. IN 1982. — The larvae of this butterfly were abundant on nettles the end of July and much of August in a rough field a few miles south of Shaftesbury. On 22nd and 23rd August, Mr. John Simner and myself collected around 30 larvae from which 28 adults emerged in September. John Simner made the interesting observation that only one of these was a female. Whether this is normal or not we do not know, but it is surely remarkable and I should welcome comments or hear of any similar observations. It is also interesting to note that this brood contained abs. *bialbata* Cabeau and *fracta* Tutt and that the single female had a yellow streak in the red band on one forewing. Finally, I may mention that on 3rd October, a warm day, among 20 *atalanta* feeding on rotting apples here in our garden, one which I captured has the normal red band on right hindwing yellow and the bands on the other wings paler than normal (ab. *flavescens* Fritsch). — R. D. G. BARRINGTON, Old College Arms, Stour Row, Nr. Shaftesbury, Dorset.

BUDDLEIA DAVIDII AND LEYCESTERIA FORMOSA AS LARVAL FOODPLANTS OF THE VAPOURER MOTH. — Dr. D. F. Owen's note in *Ent. Rec.* 95:20 concerning lepidopterous larvae feeding on *Buddleia davidii* omits the species I most readily associate with this shrub, for in the 1950s when *Orgyia antiqua* L. was much commoner in N.W. Kent than now, my parents' garden at Dartford, Kent, possessed a colony of this species for many years, the larvae feeding on climbing and rambler rose and *Buddleia davidii*. My collection contains specimens from larvae collected there from this shrub on July 7th, 1968.

A larval foodplant of *O. antiqua* I have not seen noted is *Leycesteria formosa* [Caprifoliaceae], a shrub native of the Himalayas and Western China. Each summer from 1949 to 1955 the caterpillars largely defoliated two of these shrubs and rose bushes bordering a school quadrangle at Crayford, Kent, and the cocoons almost covered the ceiling of an adjacent porch. — B. K. WEST, 36 Briar Road, Bexley, Kent.

THE GREAT GREEN BUSH-CRICKET: *TETTIGONIA VIRIDISSIMA* L. AND SPECKLED BUSH-CRICKET: *LEPTHOPHYES PUNCTATISSIMA* (BOSC.) IN PEMBROKESHIRE. — Although *Tettigonia viridissima* L. is well known as an inhabitant of southern Pembrokeshire (see Haes, E.C.M. 1979., *Provisional Atlas of the Insects of the British Isles*: Part 6 *Orthoptera*), as I had seen for myself in August, 1970, I think it is still worth mentioning here that I found it quite plentiful on the Marloes Peninsula during August, 1981.

At 1745 hrs. on August 25th I counted a dozen males stridulating in the little reed marsh which straddles the road from the Dale to Marloes where it crosses the head of a little estuary (map. ref. SM 812084). In and around Marloes village several were to be heard stridulating every afternoon and evening from the hedgerows, and my daughter heard and saw them above Marloes Sands.

My daughter also tells me that while on a Young Ornithologists' Club holiday based on Broad Haven and led by Noel Jackson they noted Speckled Bush-crickets *Leptophyes punctatissima* (Bosc.) on Dinas Island during August, 1981. Judging from Haes (1979) this species appears to have been unrecorded previously from this part of north Pembrokeshire. — J. F. BURTON, 11, Rockside Drive, Henleaze, Bristol, BS9 4NW.

LOZOTAENIODES FORMOSANUS GEYER AND PALPITA UNIONALIS HBN. IN WARWICKSHIRE. — In 1982, I took single specimens of these two moths at the m.v. light trap here in my garden. The Tortricoid *L. formosanus* occurred on 21st July, and the Pyralid *P. unionalis* on 8th July. I should be interested to know if either species has been previously recorded from Warwickshire. — C. WALE, 150 Dulverton Avenue, Chapelfields, Coventry, Warwickshire CV5 8HB.

THE SATELLITE: *EUPSILIA TRANSVERSA* HUFN. FEEDING IN JANUARY. — I found an example of this species feeding from a damaged wild rose berry along a country lane near Great Chart, Kent, on 26th January 1983. There were only two 'hips' on the shrub, and the moth which appeared to be female had chosen the bruised berry. An hour later and two hours after dark the moth was still there. I also had one of this species at light and an early *Alsophila aescularia* D. & S. turn up on a mild evening before the February cold spell set in. — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

ANDRICUS QUERCUSCALICIS BURGSDORF. — The year was omitted from my Note (*antea* 86). It should read "On August 25th 1982 Norman Heal and myself . . ." — L. CLEMONS.

NEMOPHORA DEGEERELLA L. (LEP.: INCURVARIIDAE) IN SCOTLAND. — There appears to be no published confirmed record of *Nemophora degeerella* L. from Scotland. George Bolam (1930, *Hist. Berwicks. Nat. Club* 27 (2), 229) makes a tentative claim with the comment that 'James Hardy . . . thought that he had seen it in Pease Dean, Berwickshire.' It has however long been known from the border counties of England e.g. Fenwick Wood, Northumberland (Bolam, 1930 *ibid.*) and Carlisle, Cumbria (Day, F. H. (1901) *V. C. H. Cumberland* Vol. 1, 137) so its absence from Scot-

land would be surprising. It is now a number of years since I first met the species in Scotland and perhaps I should, somewhat belatedly, put the facts on record.

On June 25th 1977 it was flying in some numbers in the early afternoon in bright sunshine in and about a small clump of birch and sallows on open heathland at Longbridgemuir, Dumfriesshire (V.C.72: O.S.Ref. NY/05.69). The following year I met it again in another locality on the opposite side of the Nith estuary. About noon on June 16th 1978 there was a large swarm of 200+ individuals composed of both sexes, but with a heavy preponderance of males, flying between 3ft to 5 ft above the path leading into the N.N.R. at Kirkconnell Flowe from the south-east. I have since seen this species on numerous occasions in the last half of June and early July flying among the birches in both 'squares' covered by this reserve (V.C. 73; O.S. Ref. NX/9670 & NX/9769.) — (Sir) ARTHUR B. DUNCAN, Castlehill, Kirkmahoe, Dumfries DG 1 1RD.

MELICTA DEIONE BERISALII RUHL AT MARTIGNY. — After reading Dr. C. J. Luckens comment (*Ent. Rec.*, 95:13) "There have been few reports of *M. deione berisalii* recently — in fact we are unable to trace any records in literature for over thirty years". I feel rather guilty in not recording my experiences in the Rhone Valley for the years 1967 and 1969, when in the former year on June 20th, I found this species in reasonable numbers and took a dozen in perfect condition. They occurred in a small area 30 to 40 sq. yards in size, in the rock face about 100 yards up the Martigny/Salvan road which runs above what used to be called in Tutt's day — "The Undercliff Martigny to Vernayaz". Unfortunately owing to a heavy fall of rock, the path along the Undercliff at the Vernayaz end was blocked about 200 yards in from the Montreux/Martigny road but I found it could still produce 29 species in one morning. The following is a list of species observed. *Pyrgus malvae* L., *P. fritillarius* Poda, *Carcharodus lavatherae* Esp., *Thymelicus flavus* Brunn., *Ochlodes venatus* Bremer, *Parnassius apollo* L., *Aporia crataegi* L., *Artogeia napi bryoniae* Hbn., *A. rapae* L., *A. manni* Mayer, *Leptidia sinapis* L., *Heodes virgaureae* L., *H. alciphron gordius* Sulz., *Cupido minimus* Fuessly, *Aricia allous* Hbn., *Agrodiaetus amanda* Schneider, *Lysandra bellargus* Rott., *Polyommatus icarus* Rott., *Vanessa cardui* L., *Aglais urticae* L., *Melitaea cinxia* L., *M. didyma* Esp., *M. phoebe* D. & S., *Hipparchia alcyone* D. & S., *Melanargia galathea* L., *Maniola jurtina* L., *Aphantopus hyperanthus* L., *Lasiommata megera*, *L. maera* L. — L. J. EVANS, 73, Warren Hill Road, Birmingham B44 8HA.

ESPERIA SULPHURELLA (FABRICIUS) (LEP.: OECOPHORIDAE) PUPAE IN JANUARY. — On 24th January, 1983, my attention was drawn by a colleague, Mr.C.Smith, to several lepidopterous larvae and pupae which he had discovered beneath the bark of a small dead stump of a sycamore *Acer pseudoplatanus* at St. Mary Magdalene Churchyard, Museum Nature Reserve, East Ham, Essex, (O. S. Ref. TQ4282). I collected a total of ten pupae and eight larvae and brought these into the laboratory where, at a temperature of 22° to 25° C., all the larvae pupated within 48 hours. The moths

emerged between 21st February and 9th March, 1983, and I was surprised to discover that they were all the Oecophorid *Esperia sulphurella* (Fab.).

Undoubtedly it was the short period of mild weather at the beginning of January, (which also brought forth from hibernation *Alucita hexadactyla* L. and *Agonopterix alstroemeriana* C1.), that was responsible for the early pupation of some of the larvae, but it is interesting that the ensuing frosty weather, with overnight temperatures down to minus 4°C. locally, did not harm these pupae. Presumably, those which failed to pupate during the early mild spell were not so well fed as those which did. Those ten insects collected as pupae all emerged within a seven day period, from 21st to 27th February; the eight collected as larvae, although they pupated within 48 hours of collection, all emerged somewhat later, between 6th and 9th March. There were no significant differences between the imagines of either batch. — C. W. PLANT, Assistant Curator, Natural Science (Biology), Passmore Edwards Museum, Romford Road, Stratford, London, E15 4LZ.

EARLY APPEARANCE OF *ORTHOSIA STABILIS* D. & S.: COMMON QUAKER IN SURREY. — I operate a Rothamsted light-trap at Haslemere, Surrey, as part of the Rothamsted Insect Survey. On the night of January 7th, 1983, a single *Orthosia stabilis* was the first moth to be caught this year. The weather during early January had been very mild with minimum air temperatures at Alice Holt Lodge (13 km north west of the trap) ranging from 1.4°C on January 7th to 10.4°C on January 6th.

The trap at Haslemere has operated continuously since 1973 and during this time the mean date for *O. stabilis* first appearance is March 25th, with a range from March 1st in 1975 and February 29th in 1976 to April 21st in 1979. The record on January 7th this year is 104 days earlier than the mean for the previous ten years, and 53 days earlier than in 1975 and 1976.

These dates for the first appearance of *O. stabilis* at light in Haslemere are in agreement with Heath (Ed.) 1979, *The Moths and Butterflies of Great Britain and Ireland*, where it is stated that this species "Occasionally emerges during mild weather in mid-winter, but the main emergence is from mid March". — T. G. WINTER, Forestry Commission Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey, 21.ii.83.

NOTES ON THE LARVA OF *OMPHALOSCELIS LUNOSA* HAW.: THE LUNAR UNDERWING (LEP.: NOCTUIDAE). — From eggs laid in October 1982 by a female of this species taken at Dartford, Kent, larvae hatched about three weeks later. They were kept in a plastic box and supplied with various grasses gathered from a weedy ditch at the back of my garden. Larval development was extremely slow throughout the early winter, and by Christmas most had moulted only once and were little more than a quarter inch long. The container was kept in the sun lounge where there was plenty of damp air. By New Year there had been a number of losses, and although a few larvae reached the third instar, only three survived to the end of January. By February only one larva

remained and was preparing for the third moult by the middle of the month. The final instar was reached by early March when feeding became more intense. Within a week the larva was full grown and eventually went to earth by the middle of the month.

E. Newman (*Illustrated Natural History of British Moths*) furnishes a good description of the larva (after Guenée), but South (*Moths of the British Isles*) gives a most inadequate one. For those not familiar with the full grown larva, here is my description of it.

Length about 25mm. Body greenish-whity-grey. Three whitish lines along back, dorsal one more distinct, the others edged darker. Each segment has four white-centred raised spots. On the first two rings these are in a line at right angles to the dorsal line. The other body segments have the front pair of spots much closer to the dorsal line than the pair behind. On the penultimate ring they are placed symmetrically, whereas on the last segment the spots are placed obliquely. Spiracles whitish, ringed with black, a darker somewhat indistinct line below them. Head: smooth, dark with a very distinctive dirty cream coloured prothoracic plate edged behind with dark brown. The larva tends to resemble an Agrotid with fairly firm skin texture and conspicuous raised spots, but the dark head and distinctive plate gives the impression of an Apamea.

In conclusion, I may add that in my experience of searching for larvae in the spring months, I have only infrequently encountered the larva of *O. lunosa*, and the only wild larvae of this species found by me were at Portland (Dorset). — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

COMBAT BETWEEN RED ADMIRAL AND SPECKLED WOOD OVER FALLEN FRUIT. — On the 9th September 1982, my wife Mary witnessed here a remarkable combat between a Red Admiral and a Speckled Wood over a decaying pear lying on a garden path. They buffeted each other with their wings in a most determined manner for some little time. Finally, *Vanessa atalanta* flew off, leaving *Pararge aegeria* to enjoy the spoils of victory. We had no idea that the latter had a penchant for the juice of over-ripe fruit. Red Admirals and Commas are the only butterflies we have noticed as having a liking for it. — P. B. SANKEY-BARKER, Plas Langattock, Crickhowell, Powys NP8 1PA.

THE BLOXWORTH SNOUT: HYPENA OBSITALIS HBN. IN 1983. — On March 6th I disturbed a moth in my garage, which flew and resettled on a beam, and was easily boxed. I recognised it as a specimen of this rare species and have checked its identity against the series in the B.M. (N.H.). The circumstances suggested that it had hibernated in the garage. — M. W. F. TWEEDIE, Barn House, Rye, Sussex TN31 7PT, 15.iv.83. [This appears to be only the eighth British specimen and the first for Sussex of this suspected immigrant. Previous records are: Bloxworth, Dorset, 21.ix.1884 (Pickard-Cambridge, *Entomologist*, 17:265); "Cambridgeshire 1895", one so-labelled (in RCK coll. in BMNH); Near the Frome at Iford, Dorset, 11.vii.1917 (Haines, *Entomologist*, 59: 256); Ummera, Co. Cork, 5.x.1936 (Donovan, *Entomologist*, 69:264); Boscastle, Cornwall, 12.ix.1943 (Richardson, *Entomologist*, 79: 22); St. Agnes,

Scilly Is., 8.ix. 1962 (Richardson, *Ent. Rec.*, 75:181); Brownsea Island, Dorset, 10.x.1965, A. T. Bromby (Lorimer, *Proc. Dorset Nat. Hist. Arch. Soc.*, 87: 39). The Paignton record in *Entomologist*, 50:44 referred to *H. obesalis* Tr. and was corrected in *Entomologist*, 79:212. — J. M. CHALMERS-HUNT].

Current Literature

A Key to the Families of British Diptera by D. M. Unwin. 1981. Field Studies 5: 513-553. An Aidgap Guide available from Field Studies, Nettlecombe Court, Williton, Taunton, Somerset TA4 4HT.

This new artificial key to the families of British Diptera was developed by Denis Unwin because of problems experienced in using the existing keys. It includes a brief introduction on the characters of flies in general and on the best means of taking identification to the species level within families. The keys employ easily seen characters, which are well illustrated by line drawings and a short diagnosis of each family is provided. In general it works well although some aberrant genera run down with difficulty. The key to the acalypterate families, which departs from previous practice in dispensing entirely with costal breaks, is not entirely satisfactory and it is in this area that difficulties are most often experienced by those familiar with the Diptera. A few minor inaccuracies in the figures, e.g. the Sciaridae wing have been noted and the numbers of species in some families is widely underestimated. This work should be of most assistance in the context of the Field Studies courses for which it was intended. — P. J. CHANDLER.

Insect Neurohormones by M. Raabe. xiv + 352 pp. 91 text figs., 48 tables. A5, boards. Plenum Press, 1982. price US \$ 51. (translated from original French).

It is a daunting task to attempt to produce an up-to-date textbook of any aspect of insect endocrinology, and this volume is a reasonable "primer" for many aspects of this complex and rapidly advancing subject.

The structure of the book is logical, beginning with the source sites and release modes of neurohormones followed by a consideration of the various functions in which neurohormones have been shown to be involved, such as endocrine gland activity, diapause, reproduction, visceral muscle functioning, colour change, behaviour, water and ion balance, protein, sugar and fat metabolism, tanning and other processes occurring at the cuticle level. Each section within each chapter is numbered for ease of reference, and the contents pages permit ready access to the desired information. The narrative style is terse, and the treatment of many topics is vanishingly brief — however the reader is never left without a reference from the bibliography, which extends to over 60 pages. Numerous text figures and tables attempt to give an overview to each topic.

This is not a book for the uninitiated, and at the price purchase will probably be confined to institutions. However most active physiologists and endocrinologists would benefit from having access to this volume. — PAUL SOKOLOFF.

Large White Butterfly, The Biology, Biochemistry and Physiology of *Pieris brassicae* (Linnaeus) by John Feltwell. Roy. 8vo., decorated hard cover, i-xvii, 1-535pp., 10 plates, 79 tables and 50 figures. Series Entomologica Vol. 18. W. Junk, P. O. Box 13713, 2501 ES The Hague, Holland. 1981. Price \$ 98 (about £52).

Few books have been published on a single butterfly species, and of those that have, still fewer cover the subject adequately. Not so the book under review, whose author seems to have left no stone unturned in his search for every scrap of information pertaining to the Large White, and in the process has collected 8,000 references to the species, of which 4,000 have been selected for this compilation with a brief indication of their contents.

Although a major pest of cabbages, it is the ease with which it can be reared in captivity — and on synthetic diets in particular — that makes the Large White so ideal for experimental purposes in the laboratory, and of such importance to the economic entomologist. With the research scientist especially in mind therefore, the author has in this monograph outlined the work already done and shown where to find the information resulting.

The preface by Miriam Rothschild is followed by 18 specialised chapters embracing an enormous amount of knowledge on every aspect of the Large White as under: Nomenclature (in part by R. I. Vane-Wright), Distribution, Life history, Foodplants, Breeding, Development, Morphology and anatomy, Physiology, Hormones, Biochemistry, Migration, Senses, Economic importance, Parasitic control (in part by M. R. Shaw), Pathogenic control (in part by H. D. Burges), Predators, Chemical control, Integrated control. To each of these chapters is appended an imposing list of bibliographical references.

Among those sections likely to be of particular interest to readers of the *Record* are that on variation (Chapter 1), with a list of subspecies and 75 aberrational names arranged alphabetically with their authors, based on that in the British Museum (Natural History). The references to original descriptions of early stages, the earliest by Maria Graffinn in 1699, and a selection of records of abundance or otherwise of the species in Great Britain since 1842. The section on breeding, with an account and list of synthetic diets, their preparation, together with a review of current research on *P. brassicae* and a world-wide list of addresses, and the various sections on migration in chapter 11, and on foodplants in chapter 4.

Regarding the make-up of the volume itself, the number of unnecessary blank spaces in the text is wasteful, and the paper used so heavy that one may have to exercise special care so as not to loosen the contents from its casing. The book is contained in a hard, durable cover however, and is well printed. — J.M.C.-H.

FOR SALE — Female specimen of *Lycaena dispar dispar* (British Large Copper) — Extinct for 135 years. £110 o.n.o. M. Elvidge, 29 Guildown Road, Guildford, Surrey.

WANTED — Oxford Scientific Films require news of a nest building queen of *Bombus pratorum* for filming on location. Would anyone who knows the whereabouts of such a nest please contact Karen Bishop on 0993 — 882819.

FOR SALE — "Entomological cabinet". 30 drawers in two tiers, internal drawer measurements 19" x 13" x 2", corked and papered, no lids or built in cells. External cabinet 37" high x 28½" wide x 20½" deep. Polished mahogany. Made to order in Hong Kong but due to misunderstanding glass insert intended for front of drawers was placed across top giving veiwing access to top drawers. Despite shortcomings specimens kept in it sucessfully for last 10 years. Offers? Buyer must collect — from North Yorkshire. John Tennant, 01-409 7380 HQ PM(A), Lansdowne House, Berkeley Square, London W1X 6AA.

FOR SALE — Republication of Frederick Valentine Melsheimer's 1806 "A Catalogue of Insects of Pennsylvania", the first separate work devoted to American insects. The facsimile lists more than 1300 species of Coleoptera (other orders were not completed), and includes a short biography of Melsheimer. Price: U.S., \$ 5.00 (over-seas, airmail \$ 6.50). Checks payable to Entomological Society of Pennsylvania, c/o Entomology Dept., Pennsylvania State University, University Park, PA 16802, U.S.A.

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THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

(Founded by J. W. TUTT on 15th April 1890) .

CONTENTS

The Immigration of Lepidoptera to the British Isles in 1982, R. F. BRETHERTON and J. M. CHALMERS-HUNT, 89. In Search of *Eurynebria*, D. R. COPESTAKE, 95. Southern Europe in 1980, W. J. TENNENT, 97. The Timing of Emergence of Parasitic Hymenoptera of *Pieris rapae* (L.) and *P. brassicae* (L.), S. C. LITTLEWOOD, 104. Some New Butterflies from Tanzania, J. KIELLAND, 107. *Calameuta pallipes* (Klug) (Symphyta: Cephidae), a Species and a Family of Sawfly New to Ireland, J. P. and M. A. O'Connor, 111. Notes Concerning Certain West Indian Butterflies, J. G. COUTSIS, 113.

NOTES AND OBSERVATIONS, 96, 103, 106, 112, 115-127.

OBITUARY: T. D. Fearnough, 114.

CURRENT LITERATURE, 127-128.

TO OUR CONTRIBUTORS

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A YEAR OF ODONATA

By ANTHONY ARCHER-LOCK*

Whatever the merits of beginning with *Micros* immediately on vacating the pram, it is never too late to supplement with dragonflies. The refreshing vignette by Lt. Col. C. F. Cowan in *The Record* (Vol. 92, page 282) prompted me; thus, late May 1982 found me camera stalking The Beautiful Demoiselle (*Agrion virgo* L.) on a Dartmoor stream, when suddenly there was a devastating clatter on the ancient granite hump bridge as a farmer shed his load of corrugated iron from his trailer. Whilst we re-loaded, and talked of otters, he suddenly remarked that a student up at the farm was "mazed on dragonflies". I was away.

Within a radius of a few miles around the south Devonshire market town of Newton Abbot, there are many dis-used ballclay pits which now form wonderful sedge and scrub-fringed ponds much frequented by loner fishermen pensive under immense green umbrellas. Here, towards the end of May, and during June, we watched Downy Emeralds (*Cordulia aenea* L.), and a female Hairy Dragonfly (*Brachytron pratense* Mueller) emerging — after an hour or two with wings folded over their backs in butterfly fashion, the wings spring flat in a twinkling; there follows a spell of quivering, and then a deliberate flight over the trees away from the water. Here too, The Emperor Dragonfly (*Anax imperator* Leach), largest of the hawkers, appeared in tireless majestic flight at every pond, sometimes hovering in tentative approach, inquisitive as with most of the hawkers and emeralds. Other company included The Broad-bodied Libellula (*Libellula depressa* L.), so fond of perching on a twig sentry post.

At the very end of May, a Bank Holiday trip to Wales enabled a stop at Whixhall Moss in Shropshire where the first males of The White-faced Dragonfly (*Leucorrhinia dubia* van der Linden) were fighting over the cottongrass filled peat cuttings, very difficult to follow and approach. From a post-emergence sheltered corner of scrub, Four-spotted Libellulae (*Libellula quadrimaculata* L.) rose in a cloud. Not far from the west coast of Wales, beneath Craig-yr-Aderyn, The Bird Rock, around whose summit a flock of coughts with another of cormorants, drifted, The Large Red Damselfly (*Pyrhosoma nymphula* Sulzer) consorted with The Common Blue Damselfly (*Enallagma cyathigerum* Charpentier) in the ditches. The Golden-ringed Dragonfly (*Cordulegaster boltonii* Donovan) was first observed from the train at a halt 1500 feet up Snowdon, causing the crews' welsh chatter to pause at the pointing finger.

Returning, we stopped at Symonds Yat to search the huge loop in the River Wye. Soon, The Club-tailed Dragonfly (*Gomphus vulgatissimus* L.) was in evidence, very local, but in numbers. They alternated between mid-river hovering, and sweeping on to the banks for a bask. Banded Demoiselles (*Agrion splendens* Harris) were numerous, the males taking up territories from the floating flowers of River Crowfoot, whilst along the sedgy margins, White-

*4 Glenwood Road, Mannamead, Plymouth.

legged Damselflies (*Platycnemis pennipes* Pallas) abounded in company with The Blue-tailed Damselfly (*Ischnura elegans* van der Linden). A sudden thunderstorm, blotting out the sun, caused all species to vanish.

A quick round trip to the Broads took in Surrey's Henley Park Lake, where a long watch proved necessary at this picturesque water of lilies, pink rhododendrons, and pine trees, before The Brilliant Emerald (*Somatochlora metallica* van der Linden) put in an appearance, fortunately to hover very close indeed. Meanwhile, numerous Red-eyed Damselflies (*Erythromma najas* Hansemann) were observed guarding their lily leaves with menace, and *C. aenea* was abundant upon this latter day of June.

During a long and somewhat vague walk along dyke paths around the eastern part of the Broads, pleasantly interrupted by a cheerful fenlady who intrigued me with the life history of her ancient treasured donkeys, I chanced upon a small colony of The Norfolk Hawker (*Aeshna isosceles* Mueller) waltzing around the edge of some carr, their wings glittering brilliantly against the sunshine in this flat landscape with distant windmills. A happy scene indeed, to which *B. pratense* also contributed. Bouts of communal activity alternated with synchronized spells of basking well down in the lush herbage of yellow iris and buttercups as if by secret command — one could easily pass by and miss the whole spectacle.

A test of identification was posed on the Somerset Levels, where The Azure Damselfly (*Coenagrion puella* L.) consorts with the much more local Variable Damselfly (*Coenagrion pulchellum* van der Linden) along the rhines. Textbook study is a necessary prerequisite, but the males are not too difficult to tell apart, especially because of the often broken and variable anti-humeral stripes of the latter species. *C. pulchellum* favours the lea-side of bushes. The rarer Southern Damselfly (*Coenagrion mercuriale* Charpentier) was seen in tentative wafting flight also in mid-June, the insect occurring on the Venn Ottery reserve in Devonshire and in the New Forest.

The Scarce Chaser (*Libellula fulva* Mueller), which is so local, best seen in the New Forest area, was seen on the River Frome, an interesting event because any degree of pollution is thought to be a fatal element. The males settle frequently on the riverside vegetation where they permit close approach with caution.

In the Fowey Valley of Bodmin Moor, full of the music of curlews, male Keeled Skimmers (*Orthetrum coerulescens* Fabricius), of a pleasing powder blue, were active over the orchid laden bogs where The Small Red Damselfly (*Ceragrion tenellum* de Villers) flew feebly amongst the rushes, accompanied by numerous teneral Black Darters (*Sympetrum danae* Sulzer); during August, the males would mature to a glistening black.

Late July required another brief visit to the ballclay ponds, for here now, on the hard baked white shores, The Black-tailed Skimmer (*Orthetrum cancellatum* L.) indulged in prolonged basking although wiley when approached, whilst in the rushy areas, the migrant Ruddy Darter (*Sympetrum sanguineum* Mueller) which is only

locally resident, made short flights of electrifying speed. Discovered recently to be much more widespread than originally thought, The Scarce Ischnura (*Ischnura pumilio* Charpentier) was found in rushy marshes beside old china clay workings, and on the cornish moors. A common dragonfly of the south east, The Brown Hawker (*Aeshna grandis* L.) was found to be plentiful by early August, for example around the old gravel pits near Marlow – best photographed along verges of abundant vegetation.

No great degree of persuasion was needed for a scottish holiday consensus – essential to find four species. The Northern Emerald (*Somatochlora arctica* Zetterstedt), sometimes on the wing by late May, was located in late July on moorland pools near the famous Chequered Skipper country of Loch Arkaig, where they hovered interminably over one pool or the next; as for some other species, this enabled surprisingly good photography in flight, at one thousandth of a second using a 135mm lens, mutual curiosity closing the distance.

Rarest of all the species, The Northern Damselfly (*Conenagrion hastulatum* Charpentier) was eventually discovered in Speyside, roosting low down on pines around a boggy verge, and in the company of The Emerald Damselfly (*Lestes sponsa* Hansemann). One interesting specimen of the former was photographed, where the anti-humeral stripes showed broken irregularity typical of *C. pulchellum*, and the spear mark was replaced by a crescent.

Upon the first morning after the train drivers' strike ended, we waited on the immaculate station at Tyndrum, learning that the train had already broken down *en route*; strident bells rang frequently whilst an exceedingly attentive stationmaster fussed over his first passengers of many a day, with frequent bulletins. Not so fortunate was a german student who leaned his rucksack against a flower pot – there was a mighty roar from the office; the first time I have seen a sun tanned face turn pale. Eventually we reached Corroir station and Loch Ossian for a good view of The Azure Hawker (*Aeshna caerulea* Stroem), brilliant blue, and truly splendid over the pools fringed with all shades of sphagnum moss, snow patched Nevis towering behind. This dragonfly landed on a sundew, a second specimen visiting to show apparent concern, before struggling achieved freedom. In the meantime, my family had vanished, so it was with relief that I saw them breasting the brow of the track towards me, waving re-assuringly. Most heart warming I thought until realising that they were merely fighting off the squadrons of horse-flies. There must be, and is, an easier way of photographing *A. caerulea*! Go further north-west.

That left The Highland Darter (*Sympetrum nigrescens* Lucas). On the west coast, the locals said "the redyens are not about 'til August", and they were right, but on July 30th, we watched several at the far end of Loch an Eilein near Aviemore in Speyside – these had been out for nearly a fortnight. On the following and last day, sitting beside a tarn, at 2300 feet, above the White Corries chairlift in Glencoe during continuous sunshine, we admired several Common Hawkers (*Aeshna juncea* L.) fighting and breeding, whilst Mountain

Ringlets drank nectar from the Heath Spotted-orchids, and a golden eagle sailed against the heavens in wide sweeps.

The last of the summer wine, in the form of a final spell at the Devonshire pools, found The Migrant Hawker (*Aeshna mixtra* Latreille) locally abundant on the lowland sites including those at Slapton Ley, in September, sharing many such haunts with the very widespread ultra-curious Southern Hawker (*Aeshna cyanea* Mueller); at one pool, both were fighting above a young otter endeavouring to stalk some panic stricken young coots. Extraordinary as it might seem, at a Dartmoor quarry pool, we watched a male *cyanea* pounce upon a laying female *juncea*, and pairing took place during an aerial flight in tandem. The *juncea* then immediately returned to the identical spot where she continued laying. Somewhat dumbfounded, although confident of the identities, we captured both, just to make sure — the released female made a whirlwind tour of the quarry, and then once again went back to lay exactly as before! On November 18th, two pairs of Common Darters (*Sympetrum striolatum* Charpentier) were still laying, the last specimen being seen on November 20th.

So that was the thirty seven species. It just remained to complete the all important Odonata Records cards from Monks Wood, and to place the photographs in the album. Such photography and observation is thoroughly challenging, enjoyable, sporting, and harmless to either party.

MEMORIES OF EVELYN CHEESMAN. — I am preparing a programme for Radio 4 about the late Miss Evelyn Cheesman (1881-1969), entomologist and explorer, and would be glad to hear of any personal memories that readers may have of her and which they would not mind my using. The programme is due to be broadcast in August this year. There is no need to write in detail: a brief outline will do. Please give your telephone number. — JOHN F. BURTON, FRES, BBC Natural History Unit, Broadcasting House, Bristol, BS8 2LR (Tel: 0272-732211 Ext. 2406).

ACLERIS HASTIANA L. BRED FROM SALIX CAPREA IN SURREY. — I only lately noticed, to my surprise, that Surrey is not among the few southern counties given for this well-known polymorphic species in Bradley, Tremewan & Smith (1973, *British Tortricoid Moths*, 1: 203), where it is stated to be extremely local in southern England, and that the larva prefers small-leaved willows and is apparently not found on *S. caprea*. It is therefore doubly noteworthy that in 1957 I bred a few specimens of *A. hastiana* from spinings found on bushes of the latter species at Oxshott, among those of *A. emargana* F. and various other willow-feeders. They were of the first brood, and the first moth to emerge was of the very characteristic *ramostriana* form, the others being plain. Since writing this I find that *hastiana* is recorded from another Surrey locality, viz. Bookham Common — see *London Naturalist*, 56 (1977): 81. — A. A. ALLEN.

CATOCALA NYMPHAGOGA ESPEL AND *HERMINIA*
ZELLERLIS WOCKE: TWO SPECIES OF
NOCTUIDAE NEW TO BRITAIN

By I. J. L. TILLOTSON*

In late July 1982 I encountered two species of moth new to Britain which had been taken at light traps. Two specimens of *Catocala nymphagoga* Espl were captured in Rothamstead traps at Tregaron, Cardiganshire and at Denny Lodge in the New Forest, Hampshire, on 28th July and 31st July respectively. I operate and identify catches from the Tregaron trap, and the Denny Lodge trap is operated by Mr. F. A. Courtier who sends the catches to me for identification. It goes without saying that these two specimens provided me with a great deal of interest, no small measure of puzzlement, and some delight, when their identity was finally revealed.

During the same week a single specimen of *Herminia zellerlis* Wocke was taken at Stackpole National Nature Reserve on the Pembrokeshire coast. During this busy period, this dull moth was set aside with a number of others for later identification and the precise date of capture became a little confused. It was taken by Miss Nicola Davies, a post-graduate student studying bat feeding behaviour, for whom I have been identifying moth catches. The insect was captured in a Heath trap which had been baited with a 'Vapona' type household insect killing strip.

[*C. nymphagoga*: Concerning this small oak-feeding *Catocala*, whose range abroad extends through Southern Europe to Western Asia and Algeria, Kirby (*Butterflies & Moths of Europe*, 277) has: "Fore-wings varied with grey and brown, with slightly dented black transverse lines; hind-wings yellow, with the base dusky, a broad black border, narrower and almost interrupted in the middle, and a narrow central stripe forming a right angle at its lower extremity, and extending nearly to the hind margin. Expands from 1¼ to 1½ inches". The insect is figured in colour in Seitz (*Macrolep. Pal.*, 3: fig. 74g), Forster & Wohlfahrt (*Die Schmetterlinge Mitteleuropas*, 4: plt. 28, fig. 7) and Novak & Severa (*Field Guide*, p. 198, fig. 1); the latter adding that this is the most abundant of the yellow-coloured european *Catocala*. Lhomme (*Cat. des Lep. de France et de Belgique*, 1: 309) gives it as occurring in South France but mainly in the mediterranean region.

H. zellerlis Wocke (= *tarsicristalis* H.-S.): This central and southern european species whose larva is said to feed on "rotten leaves and low plants generally" (Seitz), agrees somewhat in size with *H. tarsipennalis* Treit. and *H. lunalis* Scop. (= *tarsiphumalis* Hbn.) (one taken in 1977, vide *Ent. Rec.*, 90: 37), but bears a closer resemblance to the latter. There are coloured figures of the moth in Seitz (*op. cit.*, 3: fig. 74g), Koch (*Wir Bestimmen Schmetterlinge*, 3: plt. 19, fig. 439), Forster & Wohlfahrt (*op. cit.*, 4: plt. 31, fig. 16) and Culot (*Noctuelles & Geometres d'Europe*, 2: plt.

*Chief Warden, Dyfed-Powys Region, Ty Coed, Tregaron, Dyfed SY25 6JF.

79, fig. 14). According to Lhomme (*op. cit.*, 1: 333) the moth occurs in South France, with June as its time of appearance.

The specimens have been deposited in the Department of Entomology, British Museum (Natural History), where the identifications were confirmed by Mr. Honey in the case of the *C. nym-phagoga*, and by Mr. D. Carter in the case of the *H. zelleralis*. One suspects that all three specimens were immigrants. — EDITOR.]

The Buprestidae (Coleoptera) of Fennoscandia and Denmark by S. Bílý. Fauna Entomologica Scandinavica Vol. 10, 111 pages + two colour plates. 1982. Published by Scandinavian Science Press Ltd., Langasen 4, Ganlose 2760 Malove, Denmark. Ordinary price 100 D.Kr., subscription price 70 D.Kr.

This excellent entomological series was launched in 1973, but the Buprestidae form the subject of the first volume of the Coleoptera, another, covering the aquatic Adephaga is due to be published soon.

The present work follows the usual format of the series with an Introduction giving a brief history of Buprestid taxonomy; Morphology of the adult and immature stages; Bionomics and Ecology; Collecting and Preserving. There are separate keys to adults and larvae at sub-family, tribe and generic level, the key to species being included in the sections dealing with each genus; important sub-species are included. The main text is rather like "Fowler", with details of the genus followed by very adequate notes on each species including their biology and distribution.

Alas, *Agrilus sinuatus* has been omitted from the work, but this is the only "error"; other very minor points may well indeed be printing errors — viz the marking of five non-British species as British in the Catalogue (pages 100-105), but omitting *Aphanisticus emarginatus*. However, these minor points are not repeated in the text so any ambiguity is at once overcome by reference to the text *Phaenops cyanea* is included as British (in the catalogue) and given as "Not native in Great Britain" (p. 45); it is a pity this information was not expanded to "Britain, 19th century record" or similar.

In all this is a very sound work; possibly the first treatment of the north European/Scandinavian Buprestid fauna, and for the British Coleopterist, a great expansion on the Royal Entomological Society's *Handbook* (111 pages as compared to 8). A total of 48 species are treated in the book, and as the British fauna includes only twelve, all of which are instantly recognisable in the field, it might have restricted appeal to the general Coleopterist, but forms necessary reading for the serious student.

The standard of printing and quality of paper and binding are good, the 108 text figures excellent, and the two colour plates faithfully depict the metallic colouration of the adults. — J. COOTER.

AN INQUIRY INTO THE BRITISH STATUS OF *GYMNETRON PLANTAGINIS* EPP. (COL.: CURCULIONIDAE)

By A. A. ALLEN, B.Sc., A.R.C.S.¹

This species has the dubious distinction of being perhaps our most misunderstood weevil, as well as apparently one of the rarest. The present paper attempts to expose the confusion, whilst affirming its position as a member of our fauna — though, for the moment, one or two small questions remain.

T. H. Edmonds (1930), bringing it forward as British, wrote:—

"In June, 1926, I took. . . a very small *Gymnetron* which is obviously distinct from any species in the British list . . . I sent it to Col. Deville and suggested to him that it was *G. plantaginis*. He agrees that it is probably that species, but points out that it is badly rubbed . . ."

He goes on to list the differences between this species and *G. pascuorum* Gyll., which in a general way it much resembles. Unfortunately he omits some of the more important, and states others incorrectly. Thus, 'narrower' is true of the thorax only, not of the whole beetle; and he gives the antennae as 'black' instead of 'red', a point corrected by Donisthorpe (1931) in reproducing Edmonds's note (actually the character is not diagnostic). These shortcomings were probably due partly to inadequacies in his source, and partly to the fact that his insect was in reality not *plantaginis* at all! This fact should occasion little surprise, given the failure² of authors in general to appreciate the variability of the common *G. pascuorum*, especially in size, and the frequency of dwarfism in the species — a failure evidenced in Edmonds's case by the word 'obviously' above. He appears to have made up his mind that his specimen was probably *plantaginis* before sending it to Deville, whose agreement was, very properly, qualified and cautious. As the species is very rare in France and Germany, and perhaps everywhere, Deville may not have known it at first hand. Rather too much has been made of its allegedly close likeness to its commoner relative, which really is little more than superficial (cf. the table of differences to follow later).

Fortunately I was able to borrow Edmonds's beetle for examination, and found it — not unexpectedly — to be only an undersized *G. pascuorum* in poor condition. On the basis of this erroneous record *G. plantaginis* has remained on our list, and is included by Joy (1932). He, however, gives quite other characters for it than did Edmonds, and they tend to prove that what Joy had before him as that species was a female *pascuorum*, perhaps rubbed and/or with reduced puncturation and pubescence on the elytral intervals such as is often found in that sex when underdeveloped. He seems

¹149 Montcalm Road, Charlton, London SE7 8QG.

²A failure which also caused the addition to our list of *G. melas* Boh. and *G. marshalli* Donis. — now rightly synonymized. Truly *G. pascuorum* has much to answer for!

not to have realized that the difference in the point of antennal insertion on the rostrum, which he gives to separate the two species, in fact separates the two sexes of *pascuorum*.³ The many good distinctions exhibited by the true *plantaginis* (see below) could not have escaped him, had he been able to examine a genuine specimen.

Besides the original example, I have been able to study two others in the BMNH purporting to be British *plantaginis*; they had been separated out by the late Dr. K. G. Blair from the Power series of *pascuorum*, with a label "from description and Bedel". Again, however, they are plainly nothing more than small females of the last-named. One would think that in view of the rarity of *plantaginis* Blair might have published a note on these insects, but possibly after all he was not fully convinced.

I have seen but one further reference to this weevil in Britain, and that is in Donisthorpe's list of Windsor Forest Coleoptera (1939): "One specimen by general sweeping 10.vi.38". Yet again, inspection of the beetle in question in his collection revealed it as merely a dwarf *pascuorum*; I have an almost identical one from the same locality. There may, possibly, be other records unknown to me; if so, they will certainly need to be considered very carefully.

What proved the most interesting specimen in the late H. Dinnage's collection when it came into my hands some 25 years ago was a small blackish weevil doing duty for *Gymnetron veronicae* Germ., with the data 'Burgess Hill, Sussex, ix.1901, A. C. Vine'.⁴ Careful scrutiny showed it to be neither *G. veronicae* nor any other of our better known species. It is a male in good preservation except that the upperside seems abraded (see note 5 following the table). Not being sure that it could be referred to *plantaginis*, I submitted it to Dr. L. Dieckmann, the Curculionid specialist, with whom I was in touch at the time. He replied that it did indeed appear to be that very rare species, as far as he could say without an authentic example for comparison, and that it agreed at least tolerably with the description. As any other identity for the beetle is unlikely in the extreme, I propose to accept Dr. Dieckmann's expert opinion, and to regard the Sussex insect as giving sufficient grounds for retaining *G. plantaginis* on our list.

The accompanying table of characters, drawn up largely from this specimen (see, however, note 5 below), is supported substantially by the literature, e.g. Reitter (1916), Hoffmann (1958). Several of them may not have been previously noted, but should be useful in separating the two species. I compare it there with *G. pascuorum* because, as we have seen, it is always that often deceptive species which British coleopterists have hitherto mistaken for *plantaginis*; and not as implying specially close kinship. In fact, the latter is in some respects equally (though not closely) allied to *veronicae*, but differs in its narrower pronotum with more marked 'collar',

³Under 14(15) Joy mentions a tooth on underside of front tibia in *pascuorum* ♂; here 'tibia' should of course read 'femur'.

⁴Vine is remembered chiefly as a lepidopterist, but the Dinnage collection includes a number of beetles taken by him in E. Sussex.

	<i>plantaginis</i>	<i>pascuorum</i>
Clothing of upper surface	Extremely short, not concealing colour of surface; except at sides of pronotum, where it is thicker & whiter ⁵	Surface fairly closely covered by long, pale, often shining scale-hairs, on elytra partly raised (except in worn or depauperated exx.)
Sides of body in lateral view	With a thick crust of whitish scales	Without such a crust of scales
Rostrum	♂ : about as in ♀ <i>pascuorum</i> ♀ : very long, much longer than head & thorax together (Reitter)	♂ : relatively short ♀ : considerably longer than in ♂
Insertion of antennae on rostrum	♂ : $\frac{2}{3}$ of the way to apex ♀ : ? (doubtless well behind middle)	♂ at or rather before middle ♀ : well behind middle
Antennal scape	Much longer, about as long as as funicle	Very short, much shorter than funicle
Pronotum	Narrower and longer, scarcely transverse, with a groove right across front forming a collar: surface dull	Broader, plainly transverse; if such a groove is traceable, it is very near apical margin, so that collar is much narrower; interstices shining
Pronotal punctures	Smaller, each bearing a minute light scale almost flush with the surface	Larger, each bearing a long decumbent scale-hair
Elytral humeri	Marked, somewhat callose	Not marked, not at all callose
Elytral intervals	With a row of extremely short white setules ⁵	With more than one row of long raised scale-hairs
Femora	Unarmed in both sexes	With a tooth in ♂, strong & sharp on front pair
Inner side of apex of tibiae	With a smaller, shorter tooth concolorous with tibia (rufous) & hardly visible from above	With a thorn-like <i>black</i> tooth set almost at a right angle, very small in ♀ (may be largely hidden by pubescence)
Segment I of hind tarsi	Longer than lobes of 3, which are broader	Shorter than lobes of 3, which are narrower
Tarsal claws	Small, rufous, concolorous with tarsi	Long, shiny black together with apical part of onychium

long antennal scape, flat eyes not disrupting outline of pronotal sides, and reddish antennae, tibiae and tarsi, of which the claw-joint is shorter than the rest together, and the claws much shorter. It is also generally smaller. It shares however with the *veronicae/beckabungae/villosulum* group the character of a band of lighter scales at sides of pronotum, on account of which Reitter and others place it in that section.

Acknowledgements

I am grateful to Mr. Colin Johnson, of Manchester Museum, for the opportunity of studying Edmonds's putative *G. plantaginis*; to Dr. L. Dieckmann, Eberswalde, for his valued opinion of my specimen and much other help with weevils; and to the staff of the Coleoptera Section at the BMNH Entomological Department for their kind co-operation on various occasions.

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⁵In two or three respects the Vine specimen appears not to fit the description: the uniformly scaled pronotum, i.e. scales not whiter and more thickly placed at sides; the broad flat elytral intervals, seemingly glabrous and filled with illdefined puncturation, compared with Reitter's "intervals narrow" and a row of punctures and of tiny white setules on them as he and Hoffmann indicate. Abrasion may possibly account for two of these discrepancies, but not for all. There thus remains a minute element of doubt about the identity of the Burgess Hill specimen; in any case the two characters marked 5 above are taken not from it but from the literature, since authors seem agreed that *plantaginis* possesses them.

It should be added that the elytra are either extensively red except towards base, or, as in the British example, black with an apical red patch extending broadly up the sides. In *pascuorum* the area of red coloration varies greatly, and Reitter is incorrect in stating, among his key-characters for its group (p. 226), that the elytra are "niemals einfarbig schwarz" — since uniformly dark examples are frequent, here if not in Germany.

Hoffmann states that according to Eppelsheim the species under notice lives on *Plantago media* L. British coleopterists able to recognize *P. media* should give it close attention when they meet with it, for this *Gymnetron* surely awaits rediscovery in our country.

THE WHITE-LETTER HAIRSTREAK (*STRYMONIDIA W-ALBUM* KNOCH): A NATIONAL SURVEY

By C. PEACHEY*

As a follow-up to the request for information on the status of the White-letter Hairstreak by A. Archer-Lock (*Ent. Rec.*, 92: 254), the Nature Conservancy Council is organising a national survey under the auspices of the Invertebrate Site Register. Initially, a request for information on the butterfly was placed in the News of the British Butterfly Conservation Society (April 1982). Over 20 members responded and three major points emerged from the letters.

(i) The majority of the colonies mentioned, excepting the most northerly, appear to be on the decline and could become extinct in a matter of years. For example, in the Ruthin Valley in North Wales the White-letter Hairstreak was the commonest butterfly in the area prior to 1977. In 1977 Dutch Elm Disease hit the area and has been spreading very rapidly, and not surprisingly the butterfly has since undergone a decline. In fact in 1982 only two specimens were seen.

(ii) The White-letter hairstreak appears to have survived better on Wych elm rather than English elm. Smooth-leaved elm was also mentioned although it is not certain whether the butterfly will use this species as a foodplant.

(iii) There is evidence to suggest that the White-letter Hairstreak can utilize growth from suckers — but can they survive on these indefinitely? When the young trees reach a certain height elm disease has a tendency to recur.

Clearly more information is needed before any effective conservation measures can be undertaken. The means of doing this would be to have a team of recorders from all over the country — ideally one per county. Existing county lepidoptera recorders might like to take this up as an ongoing survey. A county survey could include:—

(a) a survey to check out all known colonies (surviving colonies could then be monitored each year), and a search for new colonies.

(b) a survey to locate elm trees. Elms which have survived the disease should be conserved for they could be used for future experimental introductions. Elm sucker growth, wherever it is still alive, should also be retained, particularly in areas which have been hit badly by the disease. (Do we know if Dutch Elm Disease has reached the furthest limits of the White-letter Hairstreak's range and are steps being taken to halt the spread of the disease?)

May I appeal to all butterfly enthusiasts to have a good search for the White-letter Hairstreak this summer. It is possible that the species is not as rare as we think it is. All Hairstreaks are secretive butterflies and tend to spend much of their time flying around

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tree tops and feeding on honeydew. Time and patience is certainly needed and binoculars will be helpful. Searching for eggs in late July/August is another way of locating a colony and becomes easier after finding the first egg!

I would be very happy to offer any advice to readers who wish to participate in such a survey. I would also welcome any views you may have on this species and would be interested to know of people who have successfully reared it on alternative foodplants. If you can help please write to Caroline Peachey, NCC, 19/20 Belgrave Square, London SW1X 8PY.

The Butterflies of Northern Europe by Bjorn Dal. Edited by Michael Morris. Translated by Roger Littleboy. Croom Helm, London. July 1982. £5.95.

This is a particularly attractive book because of its fresh approach to illustration and lay-out, the author, Bjorn Dal, being an artist of skill and sensitivity. Described on the flyleaf as an identification guide and general introduction to the butterflies of Northern Europe, it covers Britain, Fennoscandia and the Baltic countries. The fascinating butterflies of the high Arctic are unfortunately excluded, although one of them, *Erebia pandrose* makes a mysterious, unidentified appearance on page 49.

The introduction is followed by short accounts under various headings — the section on conservation containing some eminently sensible comments on the subject of collecting. In the main part of the guide the butterfly species are not arranged systematically but are grouped under biotopes. This arrangement is quite effective in view of the difficulty with overlapping habitats in many species. It is surprising however to find *Argynnis paphia* in the Meadowland and Marsh group rather than with the woodlanders. Each species also has a concise but informative descriptive text and a distribution map. The latter is differentiated by three colours into the normal range in northern Europe, the normal range in the rest of Europe and areas where the insect occurs irregularly. This generally works well apart from the two maps on page 47 which are obviously incorrect.

The illustrations depicting butterflies in natural positions are delightful, and I know no other artist who has captured so well the attitudes of butterflies at rest and in flight. One is hard put to choose favourites but selected for special mention are the two hibernated *Nymphalis antiopa* (frontispiece), *Oeneis jutta* page 26, *Euphydryas maturna* page 47, the delicate trio of *Philotes baton* page 74, and *Aglais urticae* page 122. There are also enlarged figures of individuals' wings of those species more difficult to determine, such as the three members of the *Thymelicus* genus the Heaths and the *Clossiana*.

The English edition has been thoughtfully edited by Dr. Michael Morris. As a supplement and northern summary to the *Field Guide to the Butterflies of Britain and Europe*, it succeeds admirably. — C. J. LUCKENS.

THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1982

By R. F. BRETHERTON* and J. M. CHALMERS-HUNT**

(Concluded from page 94)

An especially interesting novelty this year has been arrangements for recording on several of the North Sea oil rigs, which, if they can be repeated to cover longer periods and more species, could throw much light on the conditions for immigration from northern Europe.

ANNEXE I

Names of recorders

Albertini, V. M.; Agassiz, Rev. D. J. L.; Allen, Dr. A. A.; Allen, D. per PB; Badmin, J.; Baker, B. R.; Baldock, D. W.; Baldwin, A. J.; Barber, T. per MANM; Batten, A. per CRP; Bell, R. A.; Beraet, P.; Billett, D. F. per JMW; Birchenough, R.; Birkett, Dr. N. L.; Blathwayt, C. S. H.; Bond, K. G. M.; Bonney, J.; Botwright, G.; Bradford, E. S.; Bretherton, R. F.; Briggs, J.; Brown, D. C. G.; Buckham, A.; Buddle, R. F.; Burgess, G. per RGW; Burrage, W. per CRP; Burton, J. F.; Campbell, Dr. J. L.; Carpenter, E.; Castle, E. per IH; Chalmers-Hunt, J. M.; Chambers, D. A.; Chatelain, R. G.; Chipperfield, H. E.; Christie, I. C.; Church, S. H.; Clarke, Dr. J.; Classey, E. W.; Clouter, F. H.; Collins, G. A.; Colombé, J.; Convey, P. per NMH; Corley, M. per DJLA; Courtier, F. A. per IJLT; Craddock, B. per RGW; Craske, R. M.; Dacie, Sir John; Davey, P. A.; Davies, Miss N. per IJLT; Dewick, A. J.; Dey, D.; Dillon, T. J.; Dixon, D.; Dobson, A. H.; Doe, B. per Dickerson, G.; Down, D.; Dunn, T. C.; Dyer, J. per B. Skinner; Dyke, R.; Dyson, R. C.; Eley, R. per JLF; Ellis, Dr. E. A. per HEC; Elliot, B.; Elvidge, M.; Emley, D. per RGW; Emmet, Col. A. M.; Enfield, M. A.; Evans, K. G. W.; Ezard, A. H. per PQW; Fairclough, R.; Fenn, J. L.; Fitzacerley, Mrs. per PS; Fordham, B. per CRP; Foster, A. P.; Gandy, M.; Gardiner, B.O.C.; Gardner, A. per DCGB; Gascoigne, J. per CRP; Gauld, S. V. per RIL; Gill, N.; Goater, B.; Green, J. E.; Greenwood, J. A. C.; Gregory, J. per CRP; Hadley, M.; Hall, N. M.; Halsey, M. & J.; Halstead, A. J.; Hancock, E. G.; Harman, T. W.; Harmer, A. S.; Hart, C.; Harvey, M. S.; Harvey, R. per MAE; Haynes, R. F.; Heal, N. F.; Heath, J.; Heckford, R. J.; Hogg, P.; Holborn, J. M.; Horton, Dr. G. A. N.; Hudson, I.; Ironside, Miss M. per MAE; Jackson, S. M.; Jenkins, A.; Jewess, P. J. & G. T.; Jordan, M.; Kiddie, R.; Knapp, D. per AHD; Knill-Jones, Dr. R.; Lane, C. G. & R. E.; Langmaid, Dr. J. R.; Largen, R. E. per CRP; Lavery, J. W. per RFH; Levington, R. per BRB; Lorimer, R. I.; Lovell-Pank, R.; Luckens, Dr. C. J.; Lumley,

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T.; Mackay, Mrs. L. per J. Heath; Mackworth-Praed, H. N.; McCormick, R. F.; McRitchie, B. B.; Majerus, Dr. M. A. N.; Mansell, G.; Mascard, I. per CRP; Merrifield, R. K.; Miller, J. R.; Milne-Readhead, E. per CRP; Mitchell, D. W. per J. Heath; Morgan, Mrs. M. J.; Morris, Dr. M. G.; Morris, R. K.; Moss, G. per RGW; Mowbray M. J. per CRP; Murray, R. J. H.; Myers, Dr. A. A.; Newnham, T.; Newton, J.; Notton, D. per BRB; Oates, M. R.; O'Connor, Dr. J. P.; O'Heffernan, H. L.; Owen, D.; Owen, J. Palmer, S. per MRY; Parsons, M. S.; Peet, Dr. T. N. D.; Pelham-Clinton, E. C.; Penney, C. G.; Philips, A. per CRP; Phillips, J. W.; Philp, E.; Philippott, V. W.; Philippotts, J. L.; Pickess, B. P.; Pickles, A. J.; Pilcher, R. E. M.; Pittis, Rev. S. C.; Platts, J.; Pooles, S. W. P. per CRP; Porter, J.; Potter, T. A. per PQW; Prance, D. A.; Pratt, D. A.; Pratt, C. R.; Price, L. per JN; Pyman, G. A.; Radford, J. T. per B. Skinner, CRP; Reid, J.; Ralph, Miss J. M. per CRP; Rogers, M.; Rough, K. per CRP; Ruck, A.; Sankey-Barker, J. P.; Shearer, I. per NMH; Skidmore, P.; Skinner, B.; Smith, E. G.; Smith, Dr. F. H. N.; Smith, G.; Smith, Miss P. per RGW; Softly, R. A.; Sokoloff, P. A.; Spalding, A. per FHNS; Spence, B. R.; St. John, W. G.; Stallwood, B. R.; Statham, B.; Sterling, Col. D. H.; Sterling, M. J.; Sterling, P. H.; Sutherland, G. per RIL; Thomas, R. per DCGB; Tillotson, I. J. L.; Torlesse, Rear Admiral A. D.; Tremewan, W. G.; Tubbs, R. S.; Turk, Miss S. per J. Heath; Tweedie, M. W. P., Tyler, M. W. per J. Heath; Uffen, R. W. J.; Vice, M. per DCGB; Vincent, M. R.; Wake, A.; Wale, C. A. R.; Walters, J. M.; Warren, Miss E.; Warren, R. G.; Waters, P. per CRP; Waterton, P. W. per RWJU; Weddell, B. W.; Weekes, B. per MAE; West, B. K.; Whiteside, J. G.; Whittaker, E. per CRP; Wild, E. H.; Wilkes, Miss M. per MGM; Wilson, D. E.; Winter, P. Q.; Withers, B. per B. Skinner; Woodward, C. J. per CRP; Young, Dr. M. R.; Youden, G. H.

ANNEXE II

Records of scarce immigrant species in 1982
(probable or possible migrants of resident species marked*)

*AGONOPTERIX HERACLIANA L.(1) NORTH SEA: oil rig F Delta, August (per MRY).

*TEBENNA BJERKANDRELLA Thunb. (16) DEVON: Budleigh Salterton, two bred 11/14.9; Heybrook Bay, 15/16.9, three bred; Axmouth, 24/25.9, two bred: all from cocoons on *Pulicaria dysenterica* (RJH). CO. CORK: Douglas, 20.8/4.9, nine at flowers or dusk flight (KGMB); is first Irish record.

*PHTHORIMAEA OPERCULELLA Zeller (1) KENT: New Romney, 10.9, in trap with other immigrants (ECP-C); possible immigrant, or from imported tomatoes or potatoes.

EUCHROMIUS OCELLEA Haw. (1) WILTS: Steeple Ashton, 7.10 (G. Smith, *Ent. Rec.*, **95**: 33).

*MARGARITIA STICTICALIS L. (1) HANTS: Southsea, 7.8. (JRL).

URESIPHITA LIMBALIS D. & S. (2) ESSEX: Bradwell-on-Sea, 2.10, female (AJD). KENT: Westbere, 1.10, very worn (TWH).

**SITACHROA PALEALIS* D. & S. (4) HANTS: Isle of Wight, July, n.d. (RK-J). SURREY: Milford, n.d. (DWB). SUSSEX: Walberton, 14.7 (JTR per CRP); Peacehaven, 15.7 (CRP).

PALPITA UNIONALIS Hbn. (c. 80) CORNWALL: Trebrowne-bridge, 25.10 (AS per FHNS). DERBYSHIRE: Kelstedge, 19.9, male (BE). DORSET: Portland, 12.9, female (PHS), 13.9 (RAB), 17.9 (NMH), 9.9, 17.9 (BWW). ESSEX: Bradwell-on-Sea, 31.7, 13.9, 2.10 (AJD); Grays, 1.7 (DJLA) HANTS: Highcliffe, 13.9, 15.9, 16.9, two 17.10 (EHW); Hayling Island, 15.9, female, 16.9, male, 18.9, male, 21.10, male, 30.10, male (JMW); Lymington, 17.9, male, 5.10, male (AJP, ASH). HERTS: Welwyn, 3.9, 18.9 (RWJU). KENT: Dover, 9.7 (GHY); Gravesend, 9.7, 10.7, worn, 9/28.9, nine (RK); Wye, 14.9 (MAE); West Wickham, 15.9 (RB), 17.9 (M & JH); Westbere, 12.9, 18.9 (TWH); New Romney, 10.9, four (JRL, ECP-C); Dungeness, 18.9 (J. Bonney per RD), 18.9, female (RKM). SURREY: Croydon, early 7 (GAC); Bramley, 18.9, male, 20.10, female (R. F. Bretherton); Buckland, 20.10, female, 21.10, male (CH); North Cheam, 16.9 (RFMcC); Wimbledon, 17.10 (Sir J. Dacie). SUSSEX: Peacehaven, 1.7, 19.9 (CRP), 17.9 (B. Skinner); Plaistow, 27.10 (SHC); Eastbourne, 12.7 (SWP per CRP); Walberton, 14.9, 15.9, 16.9, three, 17.9, 19.9, two, 17.10 (JTR per CRP); Ninfield, 18.9 (MSP per CRP); Rogate, 20.10 (JACG). WARWICKSHIRE: Chapelfields near Coventry, 8.7 (CARW). INNER HEBRIDES: Mull, n.d. (MC per DJLA). CO. CORK: Fountainstown, 12.9, 17.9, 8.10 (AAM).

**DIORYCTRIA ABIETELLA* D. & S. (1) ORKNEY: Orphir, 5.8, with other immigrants (RIL); is probably first Orkney record.

PAPILIO MACHAON L. (3 or 4) DURHAM: Nevill's Cross, seen in a garden by Dr. P. Evans, 5.6; Durham City, 11.6, seen by Dr. P. MacDougal (TCD). KENT: Foreness Point, about 25.7, photographed by David Allan (PB). LANCS: Farnworth, 5.8, appeared to be of continental form, but much rubbed (EGH).

COLIAS HYALE L. or *C. AUSTRALIS* Vty. (2) DEVON: Branscombe, 2.6, male seen (ECP-C, JRL). SUSSEX: Seven Sisters cliffs, 15.7 (J. Gascoigne per CRP).

LAMPIDES BOETICUS L. (1) SUFFOLK: Freston, 23.7, seen by a reliable observer (EM-R per HEC).

**NYMPHALIS POLYCHLOROS* L. (7 or 8) KENT: Park Gate near Elham, 16.5, photographed by Miss M. Ironside (MAE, EP); Hayes, 15.7, on buddleia (M. Halsey), 19.7 (BE); Beckenham, 29.7 on ground, and again on 30.7, on buddleia (BD per GD); Newington, three on buddleia, about 7.8 (GJJ per PJJ). SURREY: Ranmore Common, 9.5, watched settling and flying round tree trunks (MSH, *Ent. Rec.*, 94 : 203). WARWICKSHIRE: Langley Green, 12.8, possibly locally bred (JEG).

NYMPHALIS ANTIOPA L. (4) LINCOLNSHIRE: Saltfleetby, 9.8 (REMP). YORKS: Balby, Doncaster, 12.8, seen by K. Rich (PS). ABERDEEN: Brig of Don, 19.8 (SP per MRY). ORKNEY: Race-wick Hoy, 16.9, two witnesses (per RIL).

ARASCHNIA LEVANA L. (1) SURREY: Friday Street, 21.5, in mint condition, beaten from bilberry and retained (D. Down).

Suspected immigrant; previously known in England only as a result of artificial establishment about 1912, but is widespread in France; its foodplant is *Urtica dioica* (nettle).

DANAUS PLEXIPPUS L. (7) DEVON: Fingles Bridge, Drewsteignton, about 10.8, followed in flight by D. Liley (per JMH). DORSET: Durlston, 2.6, 30.6, 7.7 (RJHM). ESSEX: Laughton, end July, in garden, identified later from book (Miss Wilkes per MGM). KENT: Wye, August, early a.m., seen by B. Weekes (per MAE); Harty Ferry, Sheppey, 8.9, probably this species (RH). Recent prevalence of releases from captivity makes immigrant status for these very doubtful.

CYCLOPHORA PUPPILLARIA L. (5) CORNWALL: Lizard, 11.9, male; Poltesco, 12.9, male (B. Skinner). HANTS: Highcliffe, 31.8 (EHW, *Ent. Rec.*, 94: 204). CO. CORK: Fountainstown, 14.9, 17.9 (AAM).

*SCOPULA RUBIGINATA Hufn. (1) KENT: Dungeness, 31.7, at light (J. Porter per B. Skinner).

RHODOMETRA SACRARIA L. (c. 130) CORNWALL: Kynance, 19.6 (M. Halsey); Lizard, 2.9 (J. Clarke), 11.9, 12.9, four males (B. Skinner); Perranporth, 9.9, 18.9, two (FHNS); Mawnan Smith, 11.9, two males (APF); Ruan Minor, several (BE); Mullion, 12.9 (HEC); Par, 15.9, onwards, many, 1.11, f. *sanguinaria* (JG per CRP). DEVON: Yealmpton, 9.8 (RL-P); Stoke Beach, 3.9, male (J. Clarke); Plymstock, 5.9, male (J. Clarke); Axminster, 18.9, 29.9 (ECP-C); Plymouth, 20.9, disturbed from grass (RFH). DORSET: Portland, 19.6 (AB per CRP); Brownsea Is., 5.9, male (AAA); Portland, 17.9, two (NMH), 18.9, two (DCGB), 23.9 (SCP); Poole, 20.9, 21.9 (SCP). ESSEX: Grays, 8.9 (DJLA); Bradwell-on-Sea, 10.9, 22/29.9, five (AJD). HANTS: Winchester, 4.9, 5.9 (DHS); Havant, 5.9, male, 25.9, male (JWP); Highcliffe, 7.9, two, 9/21.9, six (EHW); Weyhill, 8.9, male (MJ); Oakley, 10.9, Stockbridge, 11.9 (AHD); Hayling Is., 17.9, male, 20.9, male ab. *labda*, 29.9, male (JMW); Lymington, 25.9, 4.11, 7.11 (ASH); Sway, 25.9 (ADT); Sparsholt, 29.9, male, 3.11, male (RAB); Sutton Scotney, n.d. (DO). HERTS: Royston, 10.9, female (JR). KENT: New Romney, 9.9 (ECP-C, JRL); Minster-in-Sheppey, 17.9/20.9, four (FHC); Gravesend, 26.9, two, 28.9 (RK); St. Mary Cray, 28.9, male (RGC). SOMERSET: South Chard, 7.9/19.9, twelve including one f. *sanguinaria*, 3.11 (AJ). SUFFOLK: Walberswick, n.d. (HEC). SURREY: Addington, 20.9, female (B. Skinner); Bramley, 14.9, female, 1.10, male very worn (R. F. Bretherton); Croydon, 25.9, two (KGWE); Leigh, 25.9, male, 3.11, female (RF); Buckland, 28.9, male, 29.9, male (CH); Rushmoor, 19.9 (PAD); Wisley, 7.9 (AJH); Thursley, September, two (per DWB). SUSSEX: Amberham, 30.6 (B. Skinner); Peacehaven, 28.8, 7.9, 9.9, 23.9, all males (CRP); Brighton, 5.9 (KR per CRP); Ringmer, 6.9 (AB per CRP); Walberton, 10.9, 13.9, male, 1.10 (JTR per CRP); Ninfield, 14.9, 28.9 (MSP); Plaistow, 25.9 (SHC); Hassocks, 2.11 (D. Dey). WEST-MORLAND: Beetham, 10.9, 11.9, three (J. Briggs); Kendal Wood, 11.9, male, 12.9, female, 13.9, 16.9 (NLB). WILTS: Redlynch, 6.9 (ECP-C); Ashton Common, 12.9, 14.9 (G. Smith). MONMOUTH:

Usk, 10.9, male (GANH). CO. CORK: Fountainstown, 20.9 (AAM). CO. KERRY: Killarney, 23.6 (RFH).

ORTHONAMA OBSTIPATA F. (69) CORNWALL: Boscastle, 31.8 (ECP-C); Kynance, 9.9, female (B. Skinner); Lizard, 10.9, male, 11.9, male, female (B. Skinner); Poltesco, 12.9, female (B. Skinner) Par, 2.11 (per CRP). DEVON: Axminster, 1.11, male, 2.11, male, 3.11, female (ECP-C). DORSET: Portland, East Cliff, 18.9, B.O., 2.9, 3.11, two (MR per NFH). HANTS: Hayling Is., 17.9, 21.9, 28.9, males, 31.10, two females, 1.11, male (JMW); Highcliffe, 25.10, 4.11, two, 6.11, 8.11, two (EHW); Lymington, 2.11, two, 5.11, 7.11 (ASH); Sparsholt, 9.11, male (RAB). HERTS: Much Hadham, 2.8 (DEW). KENT: Dungeness, 9.9 (ECP-C); Wye, 24.10, female (MAE); Orpington, 2.10 (RGC). OXON: Caversham, 3.9 (BRB). SURREY: Bramley, 2.9, male, 30.10, male, 4.11, female (R. F. Bretherton); Wisley, 9.11, male; Leigh, 7.11, male; Rushmoor, 25.10 (PAD). SUSSEX: Peacehaven, 7.6, male, 19.9, female, 18.10, male (CRP); Walberton, 12.9, 28.9, 1.11, 4.11, two females, 6.11, 7.11, two females (JTR per CRP); Ninfield, 19.9, female, 1.10, female, 9.11, male (MSP); Rogate, 9.11, female (JACG). WARWICKSHIRE: Charlecote, 2.10, 21.10, 30.10 (DCGB, AG, *Ent. Rec.*, **94**: 239). YORKS: Spurn, 3.11 (BRS). INNER HEBRIDES: Loch na Keal, Mull, 17.9, three (Corley, *Ent. Gaz.*, **34**: 4). CO. CORK: Fountainstown, 4.9, 2.11 (AAM).

*ENNOMOS AUTUMNARIA Werneburg (c.10) HERTS: Much Hadham, mid 9, "steady arrivals, some years none" (DEW). Lincs: Gibraltar Point, 22.9 (REMP). YORKS: Spurn, 17.9, first county record (BRS). Possibly immigrant, probably vagrant from Essex or Kent.

*HYLAEA FASCIARIA L. (1) SUSSEX: Peacehaven, 17.9, female at light, f. *prasinaria* (CRP). Possibly immigrant: this form is very rare, except in Kent where it is resident.

AGRIUS CONVULVULI L. (c. 180 moths, two larvae) BERKS: Uffington, 3.8, 10.9 (EWC). CORNWALL: Mylor, 31.8 (RKM); Mullion, 10.9 (HEC); Lizard, 11.9, male (FHNS), 19.9, on light-house wall (DCGB); Poltesco, 12.9, male (B. Skinner); Perranporth, 6.9, male (per FHNS). DEVON: Chillington, 31.8, female (WLO'H, *Ent. Rec.*, **94**: 237); Woodbury, mid. 8 / mid. 9, c.20 (VWP). DORSET: Weymouth, 30.8 (VWP); Portland, 10.9 (AJP), B. O., 10.8, 28.8, 2.9, 13.9, 20.9 (MR per NFH); Arne, 15.9 (BPP); Studland, 25.9, two (DCGB). ESSEX: Danbury, mid. 9 (GAP per AME); Bradwell-on-Sea, 18.9, 19.9, two, 26.9, three (AJD). Elmdon, 19.9, with 200 *P. meticulousa* (AME); Saffron Walden, 5.10 (AME); Colchester, 7.10, three (AW). GLOS: Tetbury, 25.9 (JN). HANTS: Highcliffe, 2.8, worn, 1.10 (EHW, *Ent. Rec.*, **94**: 204); Sparsholt, 20.9, male (RAB); Lymington, 22.9 (ADT); Fisher's Pond, 27.9 (AHD); Sway, 1.10 (ASH); Havant, 2.10, at nicotiana (E. Castle per IH); Ashurst, 3.10 (per RKM); Hythe, 7.10 (per RKM). HERTS: Royston, September, two (JR). KENT: Dover, 12.8, larva (GHY), 2.10, adult (TWH); Ashford, August, larva (per MAE); Boughton Aluph, 5.9, male, 25.9, male, female, 2.10, male (MAE); Sittingbourne, 17.9, 24.9 (JB); Minster-in-Sheppey, 17.9, 19.9 (FHC); Westbere, 17.9,

30.9, 4.10 (TWH); Deal, 17.9 (per TWH); Wrotham, 23.9 (AR); Kennington, 30.9 (per MAE); Brook, 30.9 (per MAE); Sandwich, September, several (per MAE); Cliffe Woods, 1.10, at window (per EP); Wye, 6.10 (MAE); East Malling, 6.10 (DC); Dymchurch, 7.7, battered, 2.10, 3.10 (JO); Whitfield, n.d. (per R. F. Buddle). LINC'S: Saltfleetby, 3.8; South Thoresby, 18.9, 22.9, 25.9, all males (REMP). SOMERSET: South Chard, 19.9 (AJ). SUFFOLK: Nowton near Bury, 14.9, 27.9 (per HEC); Bury St. Edmunds, 29.9 and one earlier (RE per JLF). SUSSEX: Walberton, 27.7, 6.9, 10.9, 15.9/22.9, five, 26.9/30.9, nine, 1.10/5.10, eight, 11.10 (RTR per CRP); Eastbourne, 8.8 (DAC); Iden, 31.8 (BG); Anstye, 23.8 (TN); Plais-tow, 15.9 (SHC); Peacehaven, 23.9, male, 27.9, 30.9, male, 1.10, male, female at nicotiana, 3.10, female, 4.10, male, female, 5.10, two, 6.10, male (CRP); Ringmer, 26.9, two males (AB per CRP); Ninfield, 27.9 (MSP); Hassocks, 28.9 (D. Dey); Brighton, 30.9, male, 1.10, male, female (per CRP), 3.10 (RCD); Fairlight, 3.10, on a door (per CRP). WARWICKSHIRE: Charlecote, 23.9, 27.9 (AG per DCGB, *Ent. Rec.*, 94: 239). WESTMORLAND: Beetham, 31.8, male, female, 14.9, male (J. Briggs). WORCESTERSHIRE: Sinton Green, late 9 (JRG). ABERDEEN: Aberdeen City, 28.9 (MRY); North Sea oil rigs: Fulmer, 26.9; Sedneth, 30.9; Sedco, 11.9; Auk, 28.10 (per MRY). AYRSHIRE: Kilmarnock, October (per J. Heath). DUMFRIES: Moffat, 28.9, on car (AB). INNER HEBRIDES: Loch na Keal, Mull, 17.9 (Corley, *Ent. Gaz.*, 34: 4). ORKNEY: Orphir, 10.9, 18.9, two (RIL). SELKIRK: Galashiels, 12.10, on wall (AB). CO. CORK: Fountainstown, 17.9 (AAM). CO. WATERFORD: Villierstown, early 8, many 1.9 (per KGMB). CO. WICKLOW: Wicklow Harbour, 22.9 (JCO'C).

ACHERONTIA ATROPOS L. (12 moths, four larvae, one pupa) ESSEX: Colchester, 7.10, brought to museum (per curator). HANTS: Ashurst, 8.10, larva on potato (per RKM). KENT: Dover, about 1.10, brought to museum (per TWH); Whitfield, n.d., pupa (R.F. Buddle). LANCS: Bury, 22.10, later brought to Bolton Museum (EGH). NORTHANTS: Dean's Hanger School, 6.9, two full grown larvae, female emerged 20.10 (per DCGB). NOTTS: Harworth, 4.9 (Mrs. Fitzakerley per PS). OXON: Tackley, n.d., three larvae (PHS). RUTLAND: Stretton airfield, 10.11, at hanger lights (MWT per J. Heath). SUFFOLK: Felixstowe, 19.9 (per HEC); Southwold, early 10 (EAE per HEC). SURREY: Betchworth, 14.9, dead on path (J. Colombé). SUSSEX: St. Leonards-on-Sea, 30.9, at rest on garden path (MJM per CRP); Ore near Hastings, 25.10, at rest in garden (AW per CRP). ABERDEEN: Aberdeen City, 28.5 (MRY); North Sea oil rig F Delta, 3.10 (per MRY).

HYLES GALLII Rott. (3) ESSEX: Bradwell-on-Sea, 31.7 (AJD). SUSSEX: Ringmer, 14.7 (AB per CRP). ORKNEY: Stronsay, 13.7, female (G. Sutherland per RIL).

HYLES LINEATA LIVORNICA Esp. (7) DORSET: Portland B. O., 2.7 (MR per NFH). KENT: Orlestone Forest, 23.6 (RGC, *Ent. Rec.*, 94: 204); Newington, 16.9 (CGL). OXON: Emmer Green, 2.7 (DN per BRB). SUSSEX: Peacehaven, 30.6 (CRP); Brighton, 8.7, 5.9 (KR per CRP).

HIPPOTION CELERIO L. (1) ROXBURGH: Hawick, 7.11, found under window (per AB).

*EUPROCTIS CHRYSORRHOEA L. (2) YORKS: Spurn, 9.7, male at light (B. R. Spence); Rudston, 15.7 (AHE per PQW).

LYMANTRIA DISPAR L. (1) KENT: Sevenoaks, 4.8, male at light (JD per B. Skinner).

*EILEMA LURIDEOLA Zincken SUSSEX: Walberton, 14.7, "abundant suddenly; hundreds on and around trap" (JTR per CRP). Possibly immigrant.

*LITHOSIA QUADRA L. (c. 50) [CORNWALL: Perranporth, 31.7, three males (FHNS). Probably from resident colonies nearby.] DEVON: Axminster, 14.7 (ECP-C). DORSET: Portland B. O., 9.7 (MR per NFH); Arne, 10.7, two, 11.7, 14.7: all males (BPP). HANTS: Lymington, 28.6, 9.7, five, 11.7, four: all males (AJP); Highcliffe, 9.7, two, 10.7, seven, 12.7, 14.7, seven: all males (EHW); Sway, 11 & 12.7, six males (ASH). KENT: Boughton Aluph. 1.7 (MAE); Orlestone, 9.7, male (J. Halsey); Dover, 13.7, male (GHY). SURREY: Buckland, 28.6, male (CH). SUSSEX: Walberton, 1.7, 10.7, 14.7, males (JTR per CRP); Peacehaven, 10.7, male (CRP); Rogate, 11.7, worn male (JACG). Numbers, dates and association strongly suggest immigration.

UTETHEISA PULCHELLA L. (1) CO. KERRY: Fenit, near Tralee, 29.10, in good condition at car headlights (JWL per RFH).

*EUPLAGIA QUADRIPUNCTARIA Poda (1) DORSET: Portland B.O., 28.8/2.9, one seen about the garden by day (MR). Possibly immigrant; otherwise vagrant from south Devon.

*MEGANOLA ALBULA D. & S. (c.20) ESSEX: Bradwell-on-Sea, 2.7, 15.7, 1.8 (AJD). KENT: Minster-in-Sheppey, 13.7, three, nightly until 28.7 (FHC, *Ent. Rec.*, **94**: 203). Some possibly immigrant, others from local colonies.

*NOLA AERUGULA Hbn.: TRITUBERCULANA Heslop: CENTONALIS Hbn. (8) ESSEX: Bradwell-on-Sea, 15.7 (AJD). KENT Minster-in-Sheppey, 13.7, three (FHC, *Ent. Rec.*, **94**: 203); Orlestone, 14.7 (B. Skinner & JMC-H). YORKS: Spurn, 9.7, 10.7 (B. R. Spence); Flamborough, 13.7 (PQW, *Ent. Rec.*, **95**: 118). Probably immigrants: regarded as perhaps extinct in Kent since c. 1898.

*EUROIS OCCULTA L. (24) ESSEX: Harlow, 17.7 (BMcR). MIDDSEX: Grange Park, 1.8 (RD); Percy Green, 2.8 (DEW). MONMOUTH: Usk, 3.8, male (GANH). NORFOLK: Hickling, 29.7 (TNDP). STAFFS: Eccleshall, 28.7 (G. Moss per RGW); Penkridge, 31.7 (BG per RGW); Scot Hay, Newcastle-under-Lyme, 2.8, two, 3.8, two, 4.8, three (G. Burgess per RGW). This species only once before recorded from Staffs., a 19th cent. record (RGW). SUFFOLK: Cavenham, 31.7, male of continental form (CGP, *Ent. Rec.*, **94**: 202). WARWICK: Charlecote, 29.7, 31.7 (AG per DCG, *Ent. Rec.*, **94**: 239). WESTMORLAND: Kendal Wood, 31.7, 5.8 (NLB). YORKS: East Ayton (TAP per PQW). ORKNEY: Orphir, 7.8, three, 8.8, three, all pale, with broad ashen grey post-median fascia (RIL).

*DISCESTRA TRIFOLII Hufn. (1) ORKNEY: Orphir, 5.8, with undoubted immigrants (RIL).

*NOCTUA PRONUBA L. HANTS: Keyhaven, 13.7, a massive immigration; Highcliffe, 13.7, about 3,000 in cliff light trap, about 400 $\frac{3}{4}$ mile inland, continuing plague until 25.7 (EHW). Long regarded as migrant on the continent, but not previously confirmed as immigrant to Britain.

MYTHIMNA ALBIPUNCTA D. & S. (1) DORSET: Portland, 29.7, one netted at dusk (AME, ECP-C).

MYTHIMNA VITELLINA Hbn. (in Cornwall many, 22 elsewhere) CORNWALL: Chyenhal, 30 & 31.5, several faded (MWFT, *Ent. Rec.*, **94**: 150). Mawnan Smith, 19.6, male, 29.8, male, 11.9, female, two males (APF); Porthleven, 20/25.8, six (NG, *Ent. Rec.*, **94**: 203); Lizard, 27.8, 28 & 29.8, twenty five (DCGB), 1.9, many (SCP), 2 & 3.9, seven (MJS), 9/12.9, very common (B. Skinner), 11.9, four (FHNS); Gunnalloe, 2.9, male (RJH); Sennen, 2.9 (M. Hadley); Mullion, 10.9, two, 11.9, 12.9 (HEC); Perranporth, 9.9, two, 18.9 (FHNS). DEVON: Stoke Beach, 3.9, two males (J. Clarke). DORSET: Studland, 2.5 (DCGB); Portland B. O., 1.9, 3.9, 10.9, 15.9, 19.9, 2.10, 5.10, 6.10 (MR per NMH), East Cliff, 14.9 (IS per NMH); Arne, 30.9 (BPP). ESSEX: Bradwell-on-Sea, 29.9 (AJD). HANTS: Weyhill, 23.8, male, Hayling Is., 8.9, female, 6.10, male (JMW). SURREY: Oxted, about 1.11 (TJD). YORKS: Spurn, 18.9 (B. R. Spence). CO. CORK: Fountainstown, 16.9, 17.9, 18.9 (AAM).

MYTHIMNA UNIPUNCTA Haw. (19) CORNWALL: Mawnan Smith, 23.6, worn male (APF); Lizard, 4.9 (EHW per AJP); Black Head, 11.9 (FHNS); Rocky Hill, Scilly Is., 13.10, at ivy (NMH). DEVON: Axminster, 1.11, male (ECP-C). DORSET: Studland, 25.9 (DCGB); Portland B. O., 2.10, 6.10, 10.10 (MR per NMH). HANTS: Hayling Is., 22.8, male 28.9, female, 18.10, female, 28.10, male (JMW). SURREY: Rushmoor, 18.9 (PAD). INNER HEBRIDES: Loch na Keal, Mull, 17.9, three (Corley, *Ent. Gaz.*, **34**: 4). CO. CORK: Fountainstown, 16.9, 18.9 (AAM).

MYTHIMNA LOREYI Dup. (1) CORNWALL: Porthleven, 25.8, dark (NG, *Ent. Rec.*, **94**: 203).

*SENTA FLAMMEA Curtis (2) KENT: Sandwich B.O., 30.5, 5.6 (per TWH). The species is evidently established inland at Wye, having been noted there in numbers by MAE both in 1982 and in 1983.

*ENARGIA PLAEACEA Esp. (4) DORSET: Arne, 18.9 (BP & DCGB). KENT: Long Rope, Orlestone Forest, 1.8, male (CGL). SURREY: Croydon, 16.7 (GAC). SUSSEX: Walberton, 18.7, male (JTR per CRP).

*PARASTICTIS SUSPECTA Hbn. (6) YORKS: Muston, 17.7, 21.7, 23.7, three, 25.7: all darker than the local form and much worn (PQW).

*CELAENA LEUCOSTIGMA Hbn. (24) YORKS: Muston, 18.7, 1.8/27.8, fifteen, 14.9 (PQW). ORKNEY: Orphir, 4.8, 6.8, 7.8, three: f. *typica* and f. *fibrosa*, not f. *scotica* (RIL).

SPODOPTERA EXIGUA Hbn. (c. 180) BERKS: Uffington, 25.7, 18.9 (EWC). BUCKS: New Bradwell, 13.7, male (M. Hadley). CORNWALL: Mawnan Smith, 21.6, worn male, 11.9, fresh male (APF); Lizard area, 9/12.9, eleven (B. Skinner, APF, BE). DEVON: Stoke Beach, 3.9, female (J. Clarke); East Budleigh, 11.9, female (RJH); Axminster, 12.7, two (ECP-C). DORSET: Portland B. O. and East Cliff, 12/18.7, about twenty, 28.8/29.9, about 22 (AJP, BE, MR); Poole, 15.9 (SCP); Arne, 18.9 (BPP); Studland, 25.9 (DCGB). ESSEX: Bradwell-on-Sea, 19.7, 4/27.9, eighteen (AJD); Grays, 23.7 (DJLA). HANTS: Highcliffe, 8.7/21.7, thirteen (EHW); Lymington, 9.7, 23.7, 27.8/17.9, four (AJP); Oakley, 13.7 (AHD); Medstead, 13.7, three (FHNS); Hayling Is., 10.7/21.7, nine, 1.9, 5.9 (JMW); Brockenhurst, 14.8 (M. Halsey); Weyhill, 9.9, 17.9 (MJ); Sparsholt, 19.9, three, 20.9 (RAB). KENT: Greatstone, 14.7 (B. Skinner); Westbere, 19.7 (TWH); Boughton Aluph, 22.7, Wye, 22.7 (MAE); Newington, 9.9 (PJJ); New Romney, 10.9, two (ECP-C). MONMOUTH: Usk, 6.9, 10.9 (GANH). OXON: Caversham, 9.7, 18.7 (BRB). SURREY: Bramley, 11/20.7, four, 9.9, 4.9 (R. F. Bretherton). SUSSEX: Peacehaven, 21/24.6, four, 14/18.7, six, 28.8/18.9, five (CRP, B. Skinner); Rogate, 23.6, worn, 24.8, 11.9, 19.9 (JACG); Ninfield, 14/19.7, four, 12/14.9, three (MSP); Plaistow, mid. 7 (SHC); Walberton, 9/18.7, four, 22.8 (JTR per CRP); Ringmer, 15.9, two, 28.9 (AB per CRP). WARWICKS: Charlecote, 8.7, 21.8, 17/19.9, four (DCGB, AG, *Ent. Rec.*, 94: 239). YORKS: Spurn, 18.7, 21.7 (B. R. Spence). DUMBARTON: Gartlea, 13.7, one at cersatium by day (ICC). DUMFRIES: Dumfries, about 10.7, two (RK-J). CO. CORK: Riverstock, 17.7, male (KGMB); Fountainstown, 9.9, 18.9 (AAM). CO. KERRY: Kilmaha, 9.7 (KGMB).

HELICOVERPA ARMIGERA Hbn. (14) CORNWALL: Lizard, 9.9, female (B. Statham per BE); Mullion, 10.9 (HEC). DEVON: Plymstock, 30.8, male (J. Clarke). DORSET: Portland B. O., 16.7, East Cliff, 17.7, 8.10 (MR, NMH). ESSEX: Bradwell-on-Sea, 20.9, 27.9 (AJD). HANTS: Lymington, 29.9, male (AJP). KENT: Newington, 24.9, female (PJJ). SOMERSET: South Chard, 18.9 (AJ). SUFFOLK: Walberswick, 26.8 (HEC). SUSSEX: East Dean, 9.10 (BG); Ninfield, 5.11 (MP). WARWICKS: Charlecote, 23.9, 27.9, females, both infertile eggs (AG, DCGB, *Ent. Rec.*, 94: 239).

HELIOTHIS PELTIGERA D. & S. (c. 50 moths, over 200 larvae) BERKS: Didcot, 9.9 (RL per BRB). CORNWALL: Loe Bar, late 8, larvae common on *Matricaria* (NG, *Ent. Rec.*, 94: 203). DEVON: Plympton, 18.7, female (RJH); Axminster, 19.9 (ECP-C). DORSET: Portland B. O., 21.6, 4.7, 9.7, 16.7, 20.7, 23.7 (MR per NFH); East Cliff etc., 18.6, two females, 17.9, dark male (AJP), 18.6, two males (EHW), 16.7 (NMH), mid.7, female (J. Porter); Swanage, mid. 7, two females (J. Porter). HANTS: Highcliffe, 16.7, 10.9, 15.9, 20.9, dark form (EHW); Hayling Is., 23.7, male (JRW). HERTS: Bushey, 19.7 (BG). KENT: Newington, 13.7 (CGL); Detling, 13.7 (NFH); Dover, 23.7, f. *pallida* (GHY); Sandwich Bay, July (TWH); Dungeness, 5.9, three, 18.9, three (B. Skinner, JMC-H, RFMcC), 3.8, larvae common on *Senecio viscosa* (B. Skinner),

10.9, about 50 larvae (ECP-C, DCGB). OXON: Caversham, 19.9 (BRB). STAFFS: Mill Meece, 17.7, at knapweed flowers by day (DE per RGW); Tettenhall near Wolverhampton, 26.7, in m.v. trap (Miss P. S. per RGW). Never before recorded from Staffs. (RGW). SUFFOLK: Walberswick, 19.9, 25.8, about 20 larvae (HEC). SURREY: Buckland near Reigate, 4.8 (CH); Rushmoor, 11.7 (PAD); Leigh, 21.7, male (RF); Addiscombe, 18.9 (KAGE). SUSSEX: Plaistow, 14.6 (SHC); Walberton, 23.6, 18.7, Petworth, 18.7 (JTR per CRP); Peacehaven, 24.6, 5/22.7, five (CRP); Lancing, 18.7, on knapweed (RMC per CRP); Rogate, 19.7 (JACG); Hove, 3.9, at rest (RMC per CRP); Fairlight, 3.10, on a door (per CRP). Larvae: Crumbles, 31.7, twelve (CRP), 5.8, fifteen (M. Hadley, JMC-H), 10.8, seventeen (MP); Church Norton, 4.8, five (SHC), Pagham, 10.8, many (RAB), 13.8, twenty-three (R. F. Bretherton), 3.9, full grown (B. Skinner), 18.9 (J. Clarke), 3.10, five full grown (JWP). WILTS: Ashton Common, 18.9 (G. Smith).

EUBLEMMA PARVA Hbn. (two moths, about 10 larvae) DEVON: Chudleigh Knighton, 20.8, larva feeding on flower head of *Pulicaria dysenterica*, bred 19.9 (RJH); Weston Bay, 8.9, two larvae feeding on flower head of *Inula conyza* (RJH); Maidencombe, 19.9, larva on *P. dysenterica* (RJH), 25.9, three larvae on *P. dysenterica* (ECP-C, EWC). DORSET: Portland, 23.7, at m.v. light (B. Withers per B. Skinner). DUMFRIES: Parkgate, Dumfries, 10.7, in m.v. trap (RK-J).

*DELTOTE BANKIANA F. (2) KENT: St. Margaret's Bay, on cliffs, 14.7, male (J. Platts, *Ent. Rec.*, **94**: 200); Boughton Aluph, 15.7 (MAE). Possibly immigrant, or from recently established colony.

EARIAS BIPLAGA Walker (1) HANTS: Lymington, 23.7, male at light, det. D. S. Fletcher (AJP). Third British record; possibly introduced.

CHRYSOIDEIXIS ACUTA Walker (3) ESSEX: Bradwell-on-Sea, 17.9, female, ova reared (AJD). SUSSEX: Walberton, 18.9, 2.11 (JTR per CRP & B. Skinner).

TRICHOPLUSIA NI Hbn. (69) BERKS: Didcot, 9.9 (R. L. per BRB). DEVON: East Budleigh, 7.9 (RJH). DORSET: Portland East Cliff, 10.9 (AJP), 18.9 (DCGB), 18.9 (PC & IS per NMH); Poole, August (TB per MANM), 15.9 (SCP); Arne, 17.9 (BPP). ESSEX: Grays, 15.9 (DJLA); Bradwell-on-Sea, 25.9 (AJD). GLOS: Tetbury, 16.9 (JN); Stroud, 16.9 (LP per JN). HANTS: Old Basing, 10.7 (PAD); Medstead, 11.7 (FHNS); Southsea, 14.7 (JRL, *Ent. Rec.*, **94**: 204); Weyhill, 11.9, 16.9 (MJ); Lymington, 11.7, male, 16.9, female, infertile eggs (AJP); Hayling Is., 12.9, male (JRW); Sparsholt, 17.9, female, 20.9, male (RAB); Sway, n.d. (ASH). HERTS: Royston, 17.9, male (JR). KENT: Gravesend, 13.9, two, 15.9, 17.9, three (RK); Newington, 15/17.9, three (CGL); Dungeness, 17.9 (RD). Lincs: South Thoresby, 18.9 (REMP). NORFOLK: Hockwold, early 9 (JLF). SOMERSET: South Chard, 15.9, 18.9 (AJ); Weston-super-Mare, 17.9 (CSHB). SUSSEX: West Chiltington, 9.7 (JTR per CRP); Peacehaven, 16.7, male, 18.7, female, eggs infertile, 20.7, male, 22.7, male, 23.7, female, 12.9, male, female,

14.9, female, 15.9, two males, 18.9, male, female (CRP), 18.9 (DEW); Walberton, 17.7, 18.7, 21.8, 17.9 (JTR per CRP); Brighton, 16.9 (KR per CRP); Glynde, 12.9 (WB per CRP). WARWICKS: Hartshill Hayes, 18.9 (RT); Charlecote, 19.9, 20.9, Marton, 20.9 (DCGB, *Ent. Rec.*, **94**: 239); Coventry, 19.9 (MV per DCGB). YORKS: Spurn, 17.7 (B. R. Spence); Selby, 16.9 (SMJ). CO. CORK: Fountainstown, 19.9, 10.10 (AAM).

DIACHRISIA ORICHALCEA F. (2) SUSSEX: Walberton, 3.8, 9.10 (JTR per CRP).

MACDUNNOUGHIA CONFUSA Steph. (2) ESSEX: Bradwell-on-Sea, 24.8 (AJD). NORFOLK: Hickling, 3.8 (TNDP).

*AUTOGRAPHIA BRACTEA D. & S. (5) HERTS: Much Hadham, 31.7 (DEW). KENT: St. Margaret's Bay, 14.7, on cliffs (Platts, *Ent. Rec.*, **94**: 200); Minster-in-Sheppey, 14.7 (Clouter, *Ent. Rec.*, **94**: 203). YORKS: Muston, 17.7, 20.7 (PQW). Probably immigrants; alternatively, resulting from internal spread.

*SYNGRAPHIA INTERROGATIONIS L. (2) NORFOLK: Hickling, 3.8 (TNDP). ORKNEY: Orphir, 5.8, of Scandinavian form (RIL).

CATOCALA FRAXINI L. (1) HANTS: Highcliffe, 10.9, escaped from house wall above light trap (EHW, *Ent. Rec.*, **94**: 204).

CATOCALA NYMPHAGOGA Esp. (2) CARDIGAN: Tregaron, 28.7, in Rothamstead light trap (IJLT). HANTS: Denny Lodge, New Forest, 31.7, in Rothamstead light trap (FAC per IJLT). Species new to Britain.

*RIVULA SERICEALIS Scop. (23) YORKS: Spurn, 31.7, 1.8, two, 3.8, 4.8, 5.8, four (B. R. Spence); Wykham Forest, 30.7/1.8, 3.8, 4.8; Hornsea, 1.8; Flamborough, 1.8; Muston, 2.8, 4.8, two, 6.8, two, 8.8, three (PQW). These sudden appearances on or near coast, coincidentally with undoubted immigrants, suggest the arrival of a migratory swarm, either from abroad or possibly from East Anglia.

*PARASCOTIA FULIGINARIA L. (1) YORKS: Spurn, 23.7, in trap (B. R. Spence). Probably the first county record. Origin possibly similar to that of *R. sericealis*.

HERMINIA ZELLERIALIS Wocke (1) PEMBROKE: Stackpole NNR, about 29.7, in light trap (Miss ND per IJLT). New to Britain.

[POLYPOGON TARSICRINALIS Knoch SUFFOLK: an apparently strongly established colony was discovered in July, moths and larvae from which were shown (B. Skinner & BE, AES exhibition, 9.10.1982). The only two British specimens previously known were taken on the Suffolk coast in 1965 and 1966 and have been regarded as immigrants.]

POSTSCRIPT

A number of records, including three of considerable import, were received too late for mention in the first part of our paper, notably those of *Catocala nymphagoga* and *Herminia zellerialis*

(but see the Note in this issue by I. J. L. Tillotson). Likewise, the record of the single example of *Lymantria dispar* and of the Dorset specimen of *Eublemma parva*. Furthermore, we have since learnt that *Autographa bractea* was in fact taken in Kent as long ago as 1974, but was never recorded, so that its occurrence in Kent in 1982 does not constitute a new county record.

A NOTE ON FOODPLANTS OF TWO CHRYSOLINA SPP. (COL.: CHRYSOMELIDAE). — Two notes have appeared in recent volumes of this Journal (93: 27, 94:199) recording *Chrysolina polita* L. as feeding in at least moderate numbers on Gipsywort, *Lycopus europaeus* L. Evidently, therefore, this is a major foodplant of *polita* in some parts of the country — more especially, I would think, in the midlands and north. In the south my experience is that the primary host is water mint, *Mentha aquatica* L.; for where the beetle does occur on it, it is often present in large numbers. A secondary host at any rate in the south-east is marjoram, *Origanum vulgare* L., a plant of chalk downs. Here, however, there is a great difference, the beetle always occurring — so far as I have found — singly and, as it seems, in complete isolation, even when the marjoram is swept over quite wide areas. Since the plant often grows extensively and forms large masses, one can but speculate as to why populous colonies of the *Chrysolina* do not build up in such circumstances.

The rather uncommon *C. brunsvicensis* Grav. is usually stated to feed on *Hypericum* (e.g. by Joy, 1932, for Britain and by Mohr, 1966, for mid-Europe). I have taken it once on that plant (Shefford, Beds., 1930) and seen the imago thereon (Epping Forest, 1941), likewise several larvae (N. Somerset, 1931); unless these last belonged to *C. hyperici* Forst., which I doubt. But it also, and even perhaps more often with us, lives on *Mentha aquatica* — a fact that appears to have escaped notice very largely. My first specimen (1928) was actually on a leaf of the mint, with a *C. polita*, in a N. Somerset valley, the second not far away by a stream where again there was no St. John's wort, but certainly mint at no distance. At Rickmansworth, Herts. (24.ix.46), I took two by sweeping among thick beds of water-mint, and a few at roots of herbage on the cliffs at Totland Bay, Isle of Wight (23.v.48) in a damp spot where *Mentha* may well have been present, but again no *Hypericum* was visible.

The attachment of *C. brunsvicensis* to foodplants of different families is paralleled in the genus by *C. graminis* L., which has been found (in Britain) on both *Mentha* and *Tanacetum*. In each case, be it noted, both plants are strongly aromatic, and this is doubtless the crucial factor. Sometimes it is hard to reconcile host data in *Chrysolina* as between Britain and the Continent: thus for *C. staphylea* L., Mohr gives three Labiatae (one of them *Mentha*) whereas here it appears only to have been certainly associated with *Ranunculus*. — A. A. ALLEN.

RELATIONSHIP BETWEEN *NORDMANNIA ESCULI*
HUEBNER (LEP.: LYCAENIDAE) AND
CAMPONOTUS CRUENTATUS LATREILLE
(HYM.: FORMICIDAE)

By J. MARTIN and P. GURREA *

Introduction

Associations between ants and Lycaenid larvae are known since the nineteenth century, though the biological meaning as well as the origin and evolution of this relationship and the "myrmecophilous" organs have not been thoroughly explained. One of the causes of this, is a lack of knowledge evidenced by the scarcity of bibliography of this subject which has, until now, hampered a global understanding of a phenomenon which seems rather generalized in nature. This is the reason why we would like to give a new reference of these relationships in this paper.

Results

Results come from direct field observations in the locality known as "Dehesa de Arganda" (UTM 30tvk66). This area corresponds to a man-altered oak forest on basic (alkaline) soil, *Cephalanthero-Quercetum fagineae* (RIVAS-MARTINEZ, 1982).

The caterpillars of *Nordmannia esculi* Huebner fed on leaves of *Quercus coccifera* and were attended by ants of the species *Camponotus cruentatus* Latreille. The relationships were normal inside the group of facultative phytophagous myrmecophilous larvae of WARNECKE (1932). The ants were observed close to the caterpillars, slightly touching them with their antennae and buccal parts.

Two caterpillars were taken to our laboratory in order to continue their development until the attainment of the imago phase. The butterflies, a male and female, as well as the accompanying ants have been placed in the collections of the Instituto Español de Entomología.

Discussion

We have found no previous citation of *N. esculi* in association with ants, though other closely-related species of Lycaenids are known to do this as stated by MALICKY (1969). Among the closest references we can point out that of FIORI (1957) of *N. ilicis* Esper accompanied by *C. arthiops* Latreille. The ant, *C. cruentatus*, is rather frequent on mediterranean forests and, after the experiments of MALICKY (*op. cit.*) and bibliographical data given on other species of the same genus, becomes readily associated with Lycaenid larvae. Ants of this species have been previously found by us (MARTIN, 1982) with other Lycaenids.

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Summary

Caterpillars of *Nordmannia esculi* have been found accompanied by *Camponotus cruentatus*. The larvae of the Lycaenid fed on leaves of *Quercus coccifera* in Arganda (Madrid).

Resumen

Se han encontrado orugas de *Nordmannia esculi* acompañadas por *Camponotus cruentatus*. Las larvas del Licenido se alimentaban de hojas de "coscoja" (*Quercus coccifera*) en Arganda (Madrid).

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OCHTHERA MANTIS DEG. (DIPT.: EPHYDRIDAE) IN NORFOLK. — It is difficult to discover what is known of the British distribution of this remarkable Ephydrid, since records relating to flies of this family are few and scattered. *O. mantis* may, possibly, be already well known from the Fen and Broad districts of East Anglia; but as it appears to be both uncommon and extremely local (cf. Colyer & Hammond, 1951, *Flies of the British Isles*: 219-221), it may be worth recording my capture of a specimen at Catfield, Norfolk, on 22 June 1981. It was flying low down among lush herbage in open wet fen, and accompanied by another fly characteristic of such habitats — *Tropidia scita* Har. (Syrphidae). Colyer & Hammond (*l.c.*), in an interesting account of their experiences with the present species, mention finding it in some numbers in a very small area in the New Forest, in mid-April, but that in June the flies were scarce, and by September they had all disappeared. This may explain my finding but one specimen at Catfield, and the indication is that *O. mantis* is basically a spring insect. — A. A. ALLEN.

EARLY STAGES OF THE AFRICAN NYMPHALID
NEPTIDOPSIS FULGURATA PLATYPTERA
ROTHSCHILD AND JORDAN

by R. C. DENING, M.A., F.R.E.S.*

ABSTRACT

A description is given of the ovum, larva and pupa of *Neptidopsis fulgurata platyptera*, together with notes on oviposition.

BIOLOGICAL NOTES

This butterfly is common in gardens on the Mwasani Peninsula outside Dar es Salaam, Tanzania. It appears to be much commoner than species of *Neptis* in this locality, flying continuously from December to May, and probably well into the dry season.

On 11th January 1981, a female was observed flying at short intervals up and down a hedge and attempting to oviposit on the tender shoots of the common climbing vine *Dalechampia scandens* L. var. *hildebrandtii* (Pax) Pax (Euphorbiaceae). On examining the shoots, no eggs could be found. The procedure continued for about half an hour, exasperating alike for an entomological observer and no doubt also for parasitic wasps and Phorid flies. Suddenly, after a short absence, the female returned and in a quick, purposeful manner oviposited in the middle of a developing flower; thereafter it flew away immediately and was not seen again. Unfortunately the egg did not adhere and was seen to fall out of the flower, but examination of other flowers revealed another egg and numerous larvae. The latter feed on the fresh flowers and developing seedpods almost throughout their life, although some were seen to eat young leaves during the 4th and 5th instars. The oviposition procedure suggests how this species may have derived a special advantage through utilising a new niche on a foodplant, which may also be occupied by its relatives in the genera *Byblia* and *Eurytela*, both of which occur in the same gardens.

Colour slides were obtained of the life cycle.

OVUM

The egg is very pale green and is difficult to distinguish from the plant tissue with the naked eye. It is about 0.8 mm high and 0.6 mm in diameter. It has longitudinal ribs, but unlike *Byblia*, *Eurytela* and *Ariadne*, no spines. The egg hatches in about five days.

LARVA.

Instar sizes are approximately: 1st 1.2 mm, 2nd 5.7 mm, 3rd 10.15 mm, 4th about 20 mm and 5th 22 mm. The ground colour of the larva is light green, with a black head and two pronounced

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spiny cephalic horns, which are always black. In the first three instars, there are brown patches or bands on segments 2 and 3, 6 and 7, and 10, surmounted by black spines; some of the other spines are also black. In the last two instars, corresponding to the period when the larvae may emerge from the seedpods to eat young leaves, the brown and black pigments largely disappear (except on the head), and at most the tips of the spines are black. The first segment has three short greenish spines on either side of the thin dark dorsal stripe, without any branching thorns. Segments 2 and 3 also have three spines on each side, black in the early instars, and branching into about five sharp thorns. Segments 4-9 have similar spines and thorns, but four sets on each side, coloured green or black according to the segment as described above. Segments 10 and 11 have a thorned spine in the middle on the dorsal line, black in the early instars, and three thorned spines on each side. The 12th segment has only two thorned spines, always green. The amount of brown varies from larva to larva, even in the early stages. The larval stage lasts about 14 days.

PUPA

The pupa is 15mm long, pale green with a pale reddish ventral stripe on the abdomen. The back of the thorax is slightly lighter than the sides and the abdomen. There is an overall light pink, even brownish suffusion. The head is bifid. Attachment is by the cremastral hooks. The pupal stage lasts 5-6 days.

DISCUSSION

The larva is almost identical to that described by Aurivillius for *Neptidopsis ophione velleda* and is characteristic of the Tribe *Biblini*. The egg lacks the spines common to the other genera, but possibly these would confer no advantage inside the head of a flower. The pupa is closer in appearance to *Byblia* than *Eurytela*, not having the latter's winged sides.

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TROX SABULOSUS L. (COL.): A NEW COUNTY RECORD IN GLAMORGAN. — 1982 was a good year for dead sheep in the S. Wales mountains following heavy winter snow. In a remote and tiny valley where dead sheep are not removed, to the N.E. of Gilfach Goch (of 'How Green was my Valley' fame), Mid-Glamorgan, (SS 97391), I discovered *Trox sabulosus* under a dried sheep carcass on July 24th. It was covered in dirt like a ball of dung. No previous record of this species in Glamorgan is known to the National Museum of Wales. In spite of investigating several other carcasses and setting taps, no further specimens were discovered. — D. R. COPE-STAKE, 5 High St., Gilfach Goch, Porth, Mid-Glam. CF39 8SS

A CHECK-LIST OF BREEDING BRITISH MOTHS
(MACROLEPIDOPTERA)

By C. I. RUTHERFORD*

*(Concluded from page 64)***Geometridae** — Archiearinae (B. & F. p. 79)

R	Archiearis parthenias, A. notha	2
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Geometridae — Oenochrominae (B. & F. p. 79)

R	Alsophila aescularia	1
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Geometridae — Geometrinae (B. & F. pp. 79-80)

R	Aplasta ononaria, Pseudoterpna pruinata, Geometra papilionaria, Comibaena bajularia, Thetidia smaragdaria, Hemitheia aestivaria, Chlorissa viridata, Thaleria fimbrialis, Hemistola chrysoprasaria, Jodis lactearia	10
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Geometridae — Sterrhinae (B. & F. pp. 80-82)

R	Cyclophora pendularia, C. annulata, C. albipunctata, C. porata, C. punctaria, C. linearia	6
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TR or SM C. puppillaria

R	Timandra griseata, Scopula nigropunctata, S. ornata, S. rubiginata, S. marginipunctata, S. imitaria, S. emutaria, S. immutata, S. floslactata, S. ternata	10
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ER S. immorata (? date)

R	Idea ochrata, I. muricata, I. vulpinaria, I. sylvestraria, I. biselata, I. dilutaria, I. fuscovenosa, I. humiliata, I. seriata, I. dimidiata, I. subsericeata, I. contiguaria, I. trigeminata, I. emaginata, I. aversata, I. degeneraria, I. straminata	17
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OM I. serpentata, I. inquinata**FM** Rhodometra sacraria

33

Geometridae — Larentiinae (B. & F. pp. 82-94)

ER	Lythria purpuraria (1861)	
R	Mesotype virgata, Orthonama vittata	2

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- FM** *O. obstipata*
- R** *Xanthorhoe biriviata*, *X. designata*, *X. munitata*, *X. spadicearia*, *X. ferrugata*, *X. quadrifasciata*, *X. montanata*, *X. fluctuata*, *Scotopteryx bipunctaria*, *S. chenopodiata*, *S. mucronata*, *S. luridata*, *Catarhoe rubidata*, *C. cuculata*, *Epirrhoe tristata*, *E. alternata*, *E. rivata*, *E. galiata* 18
- ER** *Costaconvexa polygrammata* (1880-1908)
- R** *Camptogramma bilineata*, *Entephria flavicinctata*, *E. caesiata*, *Larentia clavaria*, *Anticlea badiata*, *A. derivata*, *Mesoleuca albicillata*, *Pelurga comitata*, *Lampropteryx suffumata*, *L. otregiata*, *Cosmorhoe ocellata* 11
- R** *Coenotephria salicata*, *Eulithis prunata*, *E. testata*, *E. populata*, *E. mellinata*, *E. pyraliata*, *Ecliptopera silaceata*, *Chloroclysta siterata*, *C. miata*, *C. citrata*, *C. concinnata*, *C. truncata*, *Cidaria fulvata*, *Plemyria rubiginata*, *Thera firmata*, *T. obeliscata*, *T. variata*, *T. cognata*, *T. juniperata*, *Eustroma reticulatum*, *Colostygia olivata*, *C. multistrigaria*, *C. pectinataria*, *Hydriomena furcata*, *H. impluviata*, *H. ruberata* 26
- R** *Coenocalpe lapidata*, *Horisme vitalbata*, *H. tersata*, *Melanthia procellata*, *Pareulype berberata*, *Spargania luctuata*, *Rheumaptera hastata*, *R. cervinalis*, *R. undulata*, *Triphosa dubitata*, *Philereme vetulata*, *P. transversata*, *Euphyia biangulata*, *E. unangulata*, *Epirrita dilutata*, *E. christyi*, *E. autumnata*, *E. filigrammaria*, *Operophtera brumata*, *O. fagata* 20
- R** *Perizoma taeniatum*, *P. affinitatum*, *P. alchemillata*, *P. bifaciata*, *P. minorata*, *P. blandiata*, *P. albulata*, *P. flavofasciata*, *P. didymata*, *P. sagittata* 10
- R** *Eupithecia tenuiata*, *E. inturbata*, *E. haworthiata*, *E. plumbeolata*, *E. abietaria*, *E. linariata*, *E. pulchellata*, *E. irriguata*, *E. exigua*, *E. insigniata*, *E. valerianata*, *E. pygmaeata*, *E. venosata*, *E. egenaria*, *E. centaureata*, *E. trisignaria*, *E. intricata*, *E. satyrata*, *E. absinthiata*, *E. goossensiata*, *E. assimidata*, *E. expallidata*, *E. vulgata*, *E. tripunctaria*, *E. denotata*, *E. subfuscata*, *E. icterata*, *E. succenturiata*, *E. subumbrata*, *E. millefoliata*, *E. simplicata*, *E. distinctaria*, *E. indigata*, *E. pimpinellata*, *E. nanata*, *E. extensaria*, *E. fraxinata*, *E. virgaureata*, *E. abbreviata*, *E. dodeoneata*, *E. pusillata*, *E. phoeniceata*, *E. lariciata*, *E. tantillaria* 44
- R** *Chloroclystis v-ata*, *C. chloerata*, *C. rectangulata*, *C. debilitata*, *Gymnoscelis rufifasciata*, *Anticollix*

	sparsata, <i>Chesias legatella</i> , <i>C. rufata</i> , <i>Carsia sororiata</i> .	9
R	<i>Aplocera plagiata</i> , <i>A. efformata</i> , <i>Odezia atrata</i> , <i>Lithostege griseata</i> , <i>Discoloxia blomeri</i> , <i>Venusia cambrica</i> , <i>Euchoeca nebulata</i> , <i>Asthena albulata</i> , <i>Hydrelia flammeolaria</i> , <i>H. sylvata</i> , <i>Minoa murinata</i> , <i>Lobophora halterata</i> , <i>Trichopteryx polycommata</i> , <i>T. carpinata</i> , <i>Pterapherapteryx sexalata</i> , <i>Acasis viretata</i>	16
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	Geometridae — Ennominae (B. & F. pp. 94-101)	
R	<i>Abraxas grossulariata</i> , <i>A. sylvata</i> , <i>Lomaspilis marginata</i> , <i>Ligdia adustata</i> , <i>Semiothisa notata</i> , <i>S. alternaria</i> , <i>S. liturata</i> , <i>S. clathrata</i> , <i>S. carbonaria</i> , <i>S. brunneata</i> , <i>S. wauaria</i>	11
ER	<i>Isturgia limbaria</i> (? date)	
R	<i>Cepphis advenaria</i> , <i>Petrophora chlorosata</i> , <i>Plagodis pulveraria</i> , <i>P. dolabraria</i> , <i>Pachycnemia hippocastanaria</i> , <i>Opisthograptis luteolata</i> , <i>Epione repandaria</i> , <i>E. paralellaria</i> , <i>Pseudopanthera macularia</i> , <i>Apeira syringaria</i> , <i>Ennomos autumnaria</i> , <i>E. quercinaria</i> , <i>E. alniaria</i> , <i>E. fuscantaria</i> , <i>E. erosaria</i> , <i>Selenia dentaria</i> , <i>S. lunularia</i> , <i>S. tetralunaria</i> , <i>Odontopera bidentata</i> , <i>Crocalis elinguaris</i> , <i>Ourapteryx sambucaria</i> , <i>Colotois pennaria</i> , <i>Angerona prunaria</i>	23
R	<i>Apocheima hispidaria</i> , <i>A. pilosaria</i> , <i>Lycia hirtaria</i> , <i>L. zonaria</i> , <i>L. lapponaria</i> , <i>Biston strataria</i> , <i>B. betularia</i> , <i>Agriopis leucophaearia</i> , <i>A. aurantiaria</i> , <i>A. marginaria</i> , <i>Erannis defoliaria</i> , <i>Menophra abruptaria</i> , <i>Peribatodes rhomboidaria</i> , <i>Selidosema brunnearia</i> , <i>Cleora cinctaria</i> , <i>Deileptenia ribeata</i> , <i>Alcis repandata</i> , <i>A. jubata</i> , <i>Boarmia roboraria</i> , <i>Serraca punctinalis</i> , <i>Cleorodes lichenaria</i>	21
ER	<i>Fagivorina arenaria</i> (1872)	
R	<i>Ectropis bistortata</i> , <i>E. crepuscularia</i> , <i>A. consonaria</i> , <i>E. extersaria</i> , <i>Aethalura punctulata</i> , <i>Ematurga atomaria</i> , <i>Bupalus piniaria</i> , <i>Cabera pusaria</i> , <i>C. exanthemata</i> , <i>Lomographa bimaculata</i> , <i>L. temerata</i> , <i>Aleucis distinctata</i> , <i>Theria primaria</i> , <i>Campaea margaritata</i> , <i>Hylaea fasciaria</i> , <i>Gnophos obfuscatus</i> , <i>G. obscuratus</i> , <i>Psodos coracina</i> , <i>Siona lineata</i> , <i>Aspitates gilvaria</i> , <i>A. ochrearia</i> , <i>Dyscia fagaria</i> , <i>Perconia strigillaria</i>	23

Geometridae total 280 species

This list thus gives a total of 691 (99 + 312 + 280) species of macrolepidoptera as defined by the generally accepted classification in use today. However, rightly or wrongly, ever since South's original publication those of us who concentrate on the macrolepidoptera have almost invariably included five other families in their sphere of activity and for this reason these families are treated in the same way.

Families of the Microlepidoptera which have over the years been traditionally included in collections of Macrolepidoptera.

Zygaenidae (B. & F. pp. 7-9)

R	Adscita statices, A. geryon, A. globulariae, Zygaena exulans, Z. loti, Z. viciae, Z. filipendulae, Z. trifolii, Z. lonicerae, Z. purpuralis	10
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Limacodidae (B. & F. p. 9)

R	Apoda limacodes, Heterogenea asella	2
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Cossidae (B. & F. p. 7)

R	Phragmataecia castaneae, Zeuzera pyrina, Cossus cossus	3
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Sesiidae (B. & F. p. 18)

R	Sesia apiformis, S. bembeciformis, Synanthedon tipuliformis, S. vespiformis, S. spheciformis, S. scoliaeformis, S. flaviventris, S. anthraciniformis, S. myopaeformis, S. formicaeformis, S. culiciformis, Bembecia scopigera, B. muscaeformis, B. chrysidiformis	14
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ER	Paranthrene tabaniformis (1909)	
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Hepialidae (B. & F. p. 2)

R	Hepialus humuli, H. sylvina, H. hecta, H. lupulinus, H. fusconebulosa	5
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 34

It would therefore appear that there are 725 species generally accepted macrolepidoptera currently resident in some part of the British Isles.

A MODERN REVIEW OF THE DEMISE OF *APORIA CRATAEGI* L.: THE BLACK-VEINED WHITE

By COLIN PRATT*

(Continued from page 52)

INTRODUCTIONS AND BREEDING

Experts disagree as to whether or not the butterfly was successfully introduced into Kent during the 1880s, the native insect having been thought by some to have just previously died out; Tutt (1896) and Allan (*loc. cit.*) thought our butterfly extinct since about 1880, whilst Frohawk (1914), Bretherton (1951) and other modern analysts believe it survived naturally as a breeding species until around 1925. The comparatively low September rainfall after 1887 supports the more recent view.

According to Merrifield (1893), a Mr. Edmonds of Windsor had for some years imported the species and allowed numbers to escape, but they had never "taken" until offspring were noticed flying in 1892; the insect successfully colonised the spot until at least the larval stage of spring 1894. September 1891 was roughly average for rainfall, the following season enjoyed 137% of average, and the following two seasons less than usual. Tutt (1896b) overwintered some German larvae during the 1895/96 winter and was "astonished . . . at the great death rate"; only 5-10% survived and the relevant September was a very dry one. In 1903, Frohawk (*loc. cit.*) tried to breed the species from locally caught examples, but all died "during hibernation"; national rainfall that September averaged 151% of normal, although this did not prevent a local abundance in Kent. He repeated the experiment the following season, with some success, when rainfall was less than average. More modernly, between 1930 and 1940 according to Newman (1954), the insect was for a time successfully re-established near Sandwich with continental stock; unfortunately more precise information is lacking. In the autumn of 1948 and the spring of the following year Newman tried again, with continental larvae being released in Winston Churchill's garden at Chartwell, Kent. This resulted in complete failure "after the hungry tits had been on their rounds in the early morning", as they apparently ate all the pupae (Newman, *loc. cit.*). More than half a century earlier, Tutt (1896a) mentioned that "larvae have pupated well in some of these instances we know, but . . . the specimens appear to have utterly failed to establish themselves", with a few odd exceptions. More recently, Newman (1965) again reported that the butterfly was breeding in east Kent, in 1964; little further information is available on the occurrence although he did note that other personal attempts at

*"Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

re-introduction with German larvae on the North Downs of Kent had been unsuccessful owing to birds eating both larvae and pupae.

In modern times, P. W. Cribb and A. Waters have successfully bred the species in this country from continental stock over several generations, but only by overwintering the larvae under the drier artificial conditions within an unheated greenhouse. Large losses were incurred when larvae were sleeved outside, although this should have eliminated most predators. Mortalities occurred mainly during spring and were thought to be due to fungal infection; significantly, deaths were not avoided when larvae originally placed outside were withdrawn to greenhouse conditions at this time. Further small losses were also experienced owing to the parasite *Apanteles glomeratus*, to predatory insects and to birds eating dispersed larvae. Hundreds of specimens were released on Holmwood Common, Surrey in the mid 1970s but none could be seen during the following season. This recent work strongly supports the view that conditions in England are still not suitable for continental examples of the black-veined white. In Scotland, however, success has been achieved with a colony over the last few years. In 1974 stock from a few hundred Spanish ova began to be reared outside in Fife by Elliott (1977). The next season saw about 200 butterflies successfully emerge and the following year about 100. This artificially assisted introduction has continued, with reinforcements from Swiss/Italian border stock in 1978, more or less successfully until the present time (Elliott, 1982). The colony was shielded from insectivorous birds in 1981 and a 65% survival rate was thereby attained. Over these years a few of the noted losses were due to *Apanteles glomeratus* but adult butterflies were "very often heavily persecuted by local birds . . . a blackbird, a song-thrush and a great tit".

The evidence presented overall by the general lack of success of foreign introductions and some artificial native rearing is inconsistent with a single causal factor; in the absence of relevant, and intimate, environmental and other recorded data made when our native butterfly was reared in the distant past, any inferences drawn from success or failure are inconclusive, except to say that several elements apparently played a part.

Ford (*loc. cit.*) thought that the black-veined white and some other native species could "only survive by adapting themselves closely to the environment which they find in certain places which chance to suit them particularly well". This could indicate that in addition to the problems already being encountered by our own *A. crataegi*, foreign imports endured an increased difficulty in finding, and then adapting to, a favourable environment in our country.

AVIAN PREDATION

As was mentioned earlier, birds were sometimes blamed for the disappearance of the butterfly in question; Dale (1887) thought the

decline "due to the great increase of small birds" after their protection. Allan (*loc. cit.*) said that there "was undoubtedly a rise in the population of many species of our smaller birds during the 19th century", which was precipitated by the decline of raptorial birds brought about by increased efficiency in game preservation, in turn made possible by several technical advances in the shot-gun: there was no such change on the Continent. The periods of abundance of the black-veined white do not correlate with those times when severe winters were known to have caused heavy mortality amongst insectivorous birds, although it may be of importance that sparrows did not substantially decrease in numbers during the severe winters of 1878 to 1881 (Gurney & Russell, 1885). Nevertheless, Kollar (*loc. cit.*), writing of larvae, stated that "small birds, particularly the titmice, devour them soon after they are hatched, as well as in the following spring . . . So eager are the birds in the pursuit of these caterpillars, that they break into their nests late in the autumn" in central European colonies. Martelli (*loc. cit.*) makes a similar assertion. More recently in this country, Newman (1965) noted of several introductions that "larvae steadily diminished in numbers; so obviously some birds, probably tits, were taking them. The same thing happened to the chrysalids". He also noted that of 300 or so larvae he had put on a hedge, only three survived to become butterflies owing to predations by birds and parasites.

The Tit family is probably foremost among birds for initiating new and adaptive feeding habits; whilst there is no evidence that the group changed its predatory habits towards *A. crataegi* larvae during the 19th century (although it would probably have gone unnoticed), "it is certainly true that the tits may take relatively large proportions of their prey when the prey is not exceptionally abundant" (Perrins, 1979). The long-tailed tit is almost wholly insectivorous and during autumn feeds primarily among hawthorn twigs, spending more than 30% of its time around this feeding site; similarly the great tit spends up to 19% of its time on hawthorn during the months of September and May (Perrins, *loc. cit.*). In illustration of their efficiency as predators, several other species of tit prey on the early stages of the tiny eucosmid moth *Cydia conicolana* Heyl. and can eat more than half of the available pupae (Gibb, 1958). In Germany at least, titmice attacked larvae of *A. crataegi* during the cold season and locally accounted for between 70% and 80% (Stellwaag, 1924).

Martelli (*loc. cit.*), reporting from Italy during the late 1920s, noted that sparrows ate many black-veined white pupae and that unclassified birds were also recorded as taking up to 4% of larvae in Russia. As regards the house sparrow in this country, although the bird could be found all over the British Isles by the end of the 17th century (this not having been the case previously), the period up to 1800 was one of consolidation (Summers-Smith, 1963). An extension of numbered range was noted here after that time, following the increase in human population and wheat production, and coincidentally with the decline of *A. crataegi*; locally, by the 1880s a position had been reached such that "sixpence per dozen

heads of sparrows (until the end of March) will be given to anyone producing them" (Gurney & Russell, *loc. cit.*).

In fruit-growing areas "the sparrow does a fair proportion of good" and in "exceptional cases large numbers of insect pests may be taken by sparrows to feed their young", up to 40% of a nestling's diet being lepidopterous larvae (Summers-Smith, *loc. cit.*). Attacks by birds on adult white butterflies (*Pieris* spp.) have been frequently recorded; Collenette (1935) listed 26 published records of the house sparrow attempting to catch such insects, the sparrow being the foremost bird recorded for assaults on butterflies in this country.

So although there is no proof that birds were solely responsible for the decline of *A. crataegi*, there is plain evidence for their involvement at a significant level.

DISEASES

The mode of the butterfly's disappearance, both locally and nationally, could be described as typical of a disease epidemic and Franz (1971), writing from Germany, considered *A. crataegi* to be a species which undergoes "more or less cyclic gradations regularly terminated by epizootics". Martelli (*loc. cit.*) discusses in detail the causes of death in the black-veined white in Italy during the late 1920s. Three diseases were major mortality factors — the virus-associated "la flaccidezza" and "giallume", and the protozoan infection "pebrin". However, there was no report of diseased larvae being found in Britain at the time of the insect's decline, despite the fact that diseases are the largest single cause of death in insects in general and their significance had been known since the early 19th century.

Fungi

Leatherdale (1958) listed 33 species of fungi which were known to attack lepidoptera in Britain and Madelin (1968) noted that "fungous diseases of insects are both common and widespread, and sometimes are severe enough almost to eliminate a population of insects in a given habitat"; it is "for many sorts of insect the major mortality factor" although this is "usually only one of a number of factors limiting their numbers". The scale of destruction was considerable in Finland, for example, during the autumns of 1928, 1936 and 1939, when *P. brassicae* L. larvae were attacked by the fungus *Entomophthora sphaerosperma* F., and during "many an autumn" this was the most important cause of disease (Kanervo, 1946).

Past objections to the theory that disease caused the disappearance of the black-veined white mainly rested on how such a disease could affect many isolated colonies at about the same time. This objection was first overcome by Steinhaus (1954), who wrote that "spores of certain entomogenous fungi may be continuously present in large numbers in fields ready to attack susceptible insect hosts, but these spores may remain inactive until appropriate con-

ditions of temperature and humidity prevail"; these fungi would then "spring up abundantly and simultaneously in widely separated localities" with "catastrophic rapidity and thoroughness". Tanada (1964), Franz (*loc. cit.*) and Christensen (1972) concurred with this view. In many colonies the decline of *A. crataegi* was nothing if not quick and absolute (Jenner Weir, 1887).

Most insect diseases are affected by humidity and temperature, but none is more dependent on the former than fungi. "Most entomogenous fungi attack their host through the integument, requiring adequate external humidity or moisture to carry out the process. Most bacteria, viruses and protozoa, on the other hand, are ingested by the insect, and their moisture requirements are satisfied by the provisions of the insect's alimentary tract or body cavity" (Steinhaus, *loc. cit.*). This mode of invasion "imposes rather rigid tolerances in the environmental conditions which permit disease induction" (Roberts & Yendol, 1971), these limits being more strict than the requirements of other diseases. Young and, particularly, gregarious larvae are more prone to disease, as after initial infection its spread is largely dependent on host-density; in addition, hibernating caterpillars are especially at risk because of the accompanying seasonal moisture. Roberts & Yendol (*loc. cit.*) thought that fungal epizootics were "usually associated with periods of high humidity, particularly rainy periods". Other foreign ecologists were so certain of the connection that Steinhaus (*loc. cit.*) wrote, "The actual amount of rainfall has been used in prognosticating the probable success or failure of entomogenous fungi in naturally controlling certain insects". Furthermore, in some countries special agricultural techniques have been used to help keep a moist environment for the induction of fungal epizootics (Franz, *loc. cit.*); and Wilding (1981) mentioned that one particular insect species was only infected after monthly rainfall exceeded 20mm. Ulliyett (1947) reported that a fungus attacked larvae of *Plutella xylostella* L. in South Africa when rain occurred, yielding high mortality rates; and Barrett (1882) had already postulated that as regards British lepidopterous larvae and pupae "mild winters act *directly*. . . . encouraging the growth of mould, which we know attacks them as soon as, from excess of rain or humidity, they become sickly". Despite the absence of reports of fungal disease within our butterfly at the time of its disappearances, modern experience with continental stock has apparently shown the presence of such a pathogen. Moreover, Martelli (*loc. cit.*) recorded that some *A. crataegi* were attacked by a fungus in Italy in 1928, although this was in the pupal stage. A hypothesis of a fungal epizootic being mainly responsible for the extinction of *A. crataegi* in this country dovetails into most of the known facts and thus answers almost every question.

Viruses

Heath (*loc. cit.*) suggested that the numbers of the black-veined white might have been heavily reduced by a virus disease. Although there is no direct evidence from this country, Hughes (1957) listed a bibliography of papers concerning insects which had been recorded

as suffering from virus diseases anywhere in the world and such infections in *A. crataegi* have been noted in Italy, and in Germany from 1921 to 1924 (Steinhaus, 1967). Kreig & Lagenbuch (1956) mentioned that a polyhedral virus had been described many times within German *A. crataegi* larvae. High humidities, such as those brought about by rainy Septembers, could assist a catastrophic virus attack (Franz, *loc. cit.*). Steinhaus (1967) confirmed that certain virus diseases caused autumnal epizootics in America. However, the environmental conditions under which such outbreaks occur are not *essentially* associated with rainfall, as was mentioned under the previous heading, although the possibility remains.

(To be continued)

Notes and Observations

THE PAPERS OF J. O. WESTWOOD: OXFORD UNIVERSITY v. THE SMITHSONIAN INSTITUTION. – A contribution to the *Record* seldom causes an international controversy, but this writer's account of the collection of John O. Westwood's papers in the Smithsonian Institution Archives, Washington, D. C. (91: 245-246) achieved that dubious distinction. The affair is of concern because of the disturbing results of negotiations between the Smithsonian and Oxford University.

Although the Smithsonian's collection of Westwood's correspondence and manuscripts had been properly acquired in the nineteenth century, Oxford officials strenuously claimed it after noticing the 1979 *Record* account, arguing that the University was the holder of Westwood's papers (*recte*, the majority of them). The request appears to have been based on insufficient knowledge of the nature of archival collections and the historical realities of their distribution. Scholars and informed archivists know well that papers of individuals have often been divided and scattered through historical circumstance, accumulating in several or more repositories. Yet Oxford pressed its curious demands until the Smithsonian relented and gave up the collection. The ceremony of transfer was described in the *Oxford Times* (21 May 1982, p. 1).

One can understand the Smithsonian's desire to keep the peace between major institutions, but it and the University must share the blame for establishing such an unfortunate precedent. It is perhaps true that scholars might benefit by consulting both collections under one roof, but such convenience was not the issue in this debate. Apparently Oxford officials believed that another repository should 'stand and deliver' under the circumstances. But why should repository A give up its manuscripts to repository B when B has a larger collection of similar papers and demands A's holdings? Such a confrontation might have been more appropriate in the American Wild West or in the Essex countryside of Dick Turpin's time.

If small institutional collections of personal papers are to be claimed and acquired by the present holders of larger portions, the result will be unfortunate, to say the least. Many of us depend upon

archival stability and integrity when citing locations of manuscript materials. We hope that other repositories will not follow Oxford's unfortunate example and the Smithsonian's response. — R. S. WILKINSON, 228 Ninth Street, N. E., Washington, D. C. 20002, U.S.A.

SOME RECORDS OF NANOPHYTES MARMORATUS (GOEZE) (COL., APIONIDAE) FROM WEST CUMBRIA. — *Nanophyes marmoratus* (Goeze) has previously been recorded from Cumbria and vice county 70, Cumberland on a few occasions, and W. F. Davidson in his list of local and uncommon Coleoptera from Cumberland and Westmorland, (1961, *Entomologist's mon. Mag.*, 97:21) gives three localities, Thurstonfield, (NY35), Great Orton and Little Orton, (NY35). While F. H. Day, (1923, *Trans. Carlisle Nat. Hist. Soc.*, 3: 103) cites one record of Fowler's from Eskdale, (SD19); this latter record originating in the *Entomologist's mon. Mag.*, 48: (1912):287. Apart from these records I have been unable to locate any other published ones for the weevil from the county, especially the western region. During the past five years or so of collecting I have found this decorative little beetle in a number of localities within West Cumbria and a selection of my records are as follows, Nr. Middlebank Farm, Beckermest, NY01.05.4.viii.79; Gaterigghow Bridge, Gosforth, NY10.04.21.vii.79; Nr. Annaside, Bootle, SD08.87.29.vii.78; Williamsons Moss, SD08.91.12.vi.82; Hall Carleton Farm, (by roadside), SD07.97.25.vi.78; Kirksanton Haws, SD13.79.5.viii.78 and Stock Bridge near Holmrook, SD13.97.27.vii.80. On each occasion specimens have been taken by working the main hostplant, *Lythrum salicaria* L. (Purple Loosetrife) and quite often the adult beetles were found in large numbers around the flower heads of individual plants; and some were observed feeding on the leaves where they made small round open holes.

A few brief notes on the biology of *N. marmoratus* are provided by Hoffman, (1958, *Faune De France.*, 62 (*Coleopteres Curculionides*, 3: 1246) who states that the larvae develop inside the flowers of *Lythrum* where they feed on the ovaries. Hoffmann (*loc. cit*) also gives a key to some seventeen varieties of this species which are known to occur in France. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF, 19.xii.82.

HYPERA ARATOR LINNAEUS (COL., CURCULIONIDAE) IN ASSOCIATION WITH BARLEY. — On 10 July, 1980 while sweeping some weedy vegetation along the edge of a barley field at Church Moss near Beckermest, West Cumbria, (Grid ref. NY01.05) I came across some green weevil larvae and cocoons on a few plants of *Spergularia arvensis* L. (Corn Spurrey) growing in among some stems of barley, *Hordeum* sp. The larvae were apparently feeding on the flowers, and a number of the cocoons had been constructed around the flower heads and on the main stems just below the leaves. Having previously known that *S. arvensis* was a foodplant of the weevil, I assumed that the larvae and cocoons were *Hypera arator* Linnaeus. Identification was later confirmed by rearing some larvae collected at the site through to the adult stage at home. While searching further along the edge of the same field, I noticed that a

few cocoons, similar to those found earlier on the spurrey, were present on some ears of barley growing close by. The cocoons were of a pale yellowish-green, the colour resembling quite closely that of the young developing barley ears, which at this time were predominately green and had not darkened to the normal golden, pre-harvesting colour. The cocoons had been constructed mainly around the awns, and a few were present lower down the ears above the spiklets. It was observed that each individual cocoon of *H. arator* in a sample of twenty ears of Barley collected from Church Moss had been constructed at between 17mm and 60mm from the top of the spiklet to the awns. The average distance was found to be 43mm. One ear from the above sample contained two cocoons which had been made directly at the apex of the spiklet.

H. arator is known to be associated with barley during the late larval period and some notes on this somewhat curious association are given by M. W. Shaw, (1961, *Entomologist's mon. Mag.*, 96: 104), whose observations were carried out at Lonmay, Aberdeenshire during July, 1959. According to the account given by Dr. Shaw, it was suggested that the presence of larvae and pupae on barley and other cereal crops was due to conditions favouring the growth of one of the weevil's hostplants, (in this case spurrey). It may also be caused through a partial failure in the cereal crop due to high acidity in the soil.

Although the report by Dr. Shaw goes some way to explain the association of *H. arator* with *Hordeum* and other cereal crops, the main question of why the larvae should migrate from its normal hostplant to the barley ears in seeking a pupation site still remains unanswered. Therefore this particularly intriguing aspect of larval behaviour requires further explanation and calls for more detailed observations and research. — R. W. J. READ, 43 Holly Terrace, Hensingham, Whitehaven, Cumbria, CA28 8RF, 20.xii.82.

FOODPLANTS OF *PLATYPTILIA CALODACTYLA* D. & S. (LEP., PTEROPHORIDAE). — The only foodplant given for this species in the literature is goldenrod (*Solidago virgaurea*).

In 1976 a single specimen was taken at mercury vapour on Colne Point Nature Reserve (near St. Osyth in north-east Essex) by Mr. M. Heath, the acting warden. Subsequently the moth was passed to me; I concurred with Mr. Heath's determination but to make trebly sure I obtained confirmation at the British Museum (Natural History).

On 14.vii.1982 Mr. A. J. Dewick took a second Essex example in his famous light-trap near Bradwell-on-Sea. It was identified by the Revd. D. J. L. Agassiz; the specimen is in mint condition and there is no doubt that the determination is correct.

Colne Point and Bradwell-on-Sea are in North Essex (VC 19) and South Essex (VC 18) respectively. They face each other across five miles of open sea at the entrance to the estuary of the R. Colne. Both have shingle spits where terns nest and both extensive salt-marshes. Goldenrod does not grow at either site; it is a scarce plant in Essex and where it does occur it is present only in small quantity. The nearest stand is on Berechurch Common which is eight miles

from Colne Point and ten from Bradwell; the next nearest is at Hockley, fifteen miles from Bradwell and twenty from Colne Point.

An alternative foodplant is probable. In *The smaller moths of Essex*, p.153, I suggested sea-aster (*Aster tripolium*); this comes next to goldenrod in botanical text-books and I still think it the most likely candidate. The star-wort (*Cucullia asteris* D. & S.) and *Coleophora virgaureae* St. feed on both goldenrod and sea-aster. Golden samphire (*Inula crithmoides*) is less likely, since Mr. Dewick knows of only two or three plants in his area. He has suggested ragwort (*Senecio jacobaea*) since the goldenrod pug (*Eupithecia virgaureata* Doubl.) feeds on this as well as on its eponymous host; but this is not essentially a coastal plant. Beirne (*British pyralid and plume moths*, p.109) writes of *P. calodactyla*, "It is very local and has been recorded, mainly from coastal districts, from Cornwall, north Devon, Kent and Lancashire". Goldenrod is sometimes found on cliffs and dunes, but Beirne's statement suggests at least the possibility of a littoral foodplant, though he then proceeds to describe the moth's behaviour in inland wood clearings.

It would be interesting to hear of any other coastal locality for *P. calodactyla* where goldenrod is apparently absent. According to Beirne, there is little evidence of larval feeding and prodigious luck would be needed to find such an elusive species on a plant as locally abundant as sea-aster — A. M. EMMET, Labrey Cottage, Victoria Gardens, Saffron Walden, Essex, CB11 3AF.

BEMBECIA CHRYSIDIFORMIS ESPER (LEP.: SESIIDAE). — Referring to Mr. Allen's Note (*antea* 76) on a Dorset record, I was somewhat puzzled by his statement that this species is practically confined to The Warren, Folkestone. On 3rd June, 1944, while on a buffer depot inspection at Whitstable, Kent, I saw a specimen visiting flowers on a waste patch on the coast there. I was able to pillbox it and the specimen was passed to the British Museum (Natural History) with my collection. — S. N. A. JACOBS, 54 Hayes Lane, Bromley, Kent BR2 9EE.

PAMMENE OBSCURANA STEPHENS (LEP.: TORTRICIDAE) IN ESSEX. — On the night of the 7th/8th June 1983, while collecting at m.v. light with Mr. B. Skinner in Epping Forest, I was delighted to take a fresh specimen of this species, which according to Emmet (*The Smaller Moths of Essex*, 126) had not been seen in Essex for at least 80 years. The night was close and humid with hardly a breath of wind, there was no moon, and at 10pm the temperature registered 64° F. which had only dropped two degrees by 2am. — J. M. CHALMERS-HUNT.

BUTTERFLY BEHAVIOUR — CELTIS, CRATAEGI, SPINI. — I would just like to put on record various behavioural observations regarding three butterfly species. The first concerns the feeding behaviour of the Nettle-tree butterfly (*Libythea celtis* Laicharting) Europe's only example of a snout butterfly. During the spring of 1982 (early April) in an apple orchard in the Cévennes (near St. Martial, 30440) some 15-20 *L. celtis* had selected just one of the apple trees on which to feed. All the trees were in the stage of leafing up and bursting out of their buds yet the butterflies had

selected only one tree and were moving about fairly rapidly feeding on some secretion or other which was not obvious with the naked eye. This raises the question of whether these hibernators were imbibing sugary solutions for sustenance or whether they were taking up essential ingredients to be used in some physiological process such as pheromone manufacture.

A most memorable feature of a visit to the Cevennes in early June 1981 was the abundance of Black veined whites (*Aporia crataegi* L.). They are normally scarce during Easter and late summer (i.e. April and August) but clearly the period of early June coincides with their peak of flight activity. In one place on the Causse de Blandas (633 m or 2077 feet) near the magnificent Cirque de Navacelles there were so many *A. crataegi* bobbing about that some sort of count was deemed necessary. This was done by turning slowly through 360° while standing in the same place and counting the numbers of butterflies seen up to about 95 metres (or about 317 feet) away. Three revolutions gave counts of 141, 167 and 130 respectively, i.e. about 150 Black veined whites could be seen around one's-self at any one time. There were thousands of acres like this so that the total population of *crataegi* here must lie in the millions. All the time the butterflies were really engaged in courting and seeking out and ovipositing on the sloe *Prunus spinosa* bushes.

Another memorable event was an evening stop at the roadside where there were plenty of scrub Juniper (*Juniperus communis*) bushes up to two metres high. On these were groups of up to five Blue-spot Hairstreaks (*Strymonidia spini* D. & S.) resting head up for the night at the top of the bushes. They seemed to prefer communal resting spots and other butterflies such as the gatekeeper (*Pyronia tithonus* L.) joined them. — JOHN FELTWELL, Marlham, Henley Down, Catsfield, East Sussex, TN33 9BN.

CONCERNING THE FIERY CLEARWING: BEMBECEIA CHRYSIDI-FORMIS ESPER. — Apropos the Notes on this moth by Messrs. A. A. Allen and S. N. A. Jacobs (*antea* 76 and 169). For more than a century the Fiery Clearwing has been found fairly regularly, and sometimes in considerable numbers, on the coast between Folkestone and Dover though nowhere else in Britain now for over 30 years, and then mainly as singletons widely scattered along the south-west, south and south-east coasts and amounting in all to perhaps little more than a dozen examples. Localities whence it has been recorded besides those referred to above are. — SUSSEX: Eastbourne, one vii.1874 (Shearwood, *Entomologist*, 7: 224). HAMPSHIRE: Haslar neighbourhood, one 1851 (Barron, *Zoologist*, 3289); Southsea, bred 1885 (Moncreaff per Pearce, *Entomologist*, 24: 93); Hayling, formerly (A. E. Burras per Fassnidge, *List of Macro-Lepidoptera of Hants. & Isle of Wight* (1924), 36). ESSEX: Between Leigh and Southend, one 23.vi.1851 and several others at different times including one 3.vii.1859, by P. Bouchard (B. Gill per Vaughan, *Essex Nat.*, 3(7-9):127) KENT: Millstrood, one 6.vii.1946 (Harris, *Entomologist*, 81: 127. DEVON: Hartland, late vi. 1950 (Wakely per Stidson, *The Lepidoptera of Devon*, 73). Woola-

combe, one seen 7.ix.1888, but questionably this species (Longstaff, *Ent. mon. Mag.*, 38:28). GLOUCESTERSHIRE: Forest of Dean district (Flint, *Entomologist*, 35: 329). The last two records are considered doubtful. — J. M. CHALMERS-HUNT.

Current Literature

The Butterflies of Scandinavia in Nature by H. J. Henriksen and I. B. Kreutzer. Translated from the original Danish text by Elisabeth Folino. 4to. Published by Skandinavisk Bogforlag, Odense, Denmark, 1982. Price £50.

Of all the butterflies of Europe perhaps least known are those of the Arctic region, and in this fine book many of the gaps in our knowledge of these species have at last been filled. It is also the first comprehensive survey in English of all the butterflies of Scandinavia, as the 121 species occurring in the region are described, and superbly illustrated in 207 pages.

The general format for each butterfly is a page of text opposite a full page of colour photographs. There are a few exceptions to this rule — some of the *Clossiana* and 'Blues' and all the 'Skippers' share space whereas *Parnassius apollo* L. is favoured with two pages of plates and two of text. The plates are composed of between 5 and 12 colour photographs of habitat, living imagines, (usually male and female upperside and underside) and early stages where possible. Some of the high Arctic species of *Clossiana*, *Oeneis* and *Pyrgus*, still have incompletely known life histories and the illustrative gaps are mainly among these genera. The imagines are well photographed and are, as the title of the book suggests, living examples in the wild. Variation and subspeciation are also included among these plates. Some butterflies are represented by up to 11 individual specimens. One sub-species omitted from the plates however, is the interesting ssp. *norvegica* Aurivillius of *Mellicta athalia*. This seems a pity, as it has one of the most distinctive wing patterns of all the forms of *athalia*, and is confined to northern montane Scandinavia.

The attractive photographs of habitat are relevantly presented in opposition to the butterflies they harbour. Usually only one locality view is given per species; in some instances two are included, usually where different biotopes are involved. All these seem appropriate to the given species and with one or two minor exceptions are in pinpoint focus and reproduced in fine natural colour.

The distribution maps are inserted in the top right of the text page and represent current range only. The occurrence of *Colias palaeno* in Denmark is not registered on the relevant map but that is the only error that I can detect among these.

The original Danish text has been translated into excellent grammatical English with a distinctive style. Classification is in the old style order starting with the Papilionidae and Pieridae, and ending with the Hesperidae.

Scientific name, English name and type locality, are given at the top and the text page is divided into headings of description; geographic variation; individual variation; early development; time of appearance; habitat; habits and distribution. The sections on early development and habits are especially interesting and reveal obvious first hand knowledge. Much new information is included: there are meticulous accounts for example of diurnal variation of flight pattern; preferred nectar-sources are listed and accounts of the biology of some of the rarer arctic butterflies are provided for the first time.

The book is well produced in green book-cloth and printed on glossy paper. The reviewer is hard put to avoid superlatives. The text is accurate, plates are excellent, and in general it is a pleasure to use. The authors, translator, photographers and publishers all deserve the highest praise for producing one of the finest books on the butterflies of a European region to appear in many years. — C. J. LUCKENS.

The Insects by R. F. Chapman. Third edition. xiv + 919 pp. numerous text figs. 245 x 190 mm. Hodder & Stoughton, 1982. £19.50 (paperback).

It is now ten years since the second edition of Dr. Chapman's book, and much of the original material has been revised and extended. It is a pity that the book is only available as a hefty (but sturdy) paperback. Perhaps this is the only way to keep costs within reasonable limits.

This is not a taxonomic work, nor a textbook of entomology in the 'classical' style, but a book which emphasises the interdependence of structure and function. The text is divided into six major sections, these being: the head; the thorax; the abdomen; the cuticle; the nervous and sensory systems, and the circulatory and endocrine systems. Each section is supported by chapters which develop the theme of the section. For example the "Head" leads to chapters on the structure of the head and its appendages, feeding, the alimentary canal, digestion and absorption, nutrition, fat body and general metabolism, and colour, whereas the "Abdomen" contains chapters on general structure, reproductive systems, mating behaviour, oviposition, embryology, unusual types of development, hatching, post-embryonic development and metamorphosis. Other sections are covered in a similar fashion, and each chapter concludes with a bibliography.

This interesting approach to entomology is coupled with the provision of numerous, clear text illustrations and a highly readable narrative. It is refreshing to see a sensible integration of morphology, physiology and biochemistry in a single volume. There are, of course, misprints and the odd biochemical "irregularity" but on balance this is a first class book — well written, well organised and informative. — PAUL SOKOLOFF.



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THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION

(Founded by J. W. TUTT on 15th April 1890)

CONTENTS

- A Year of Odonata, A. ARCHER-LOCK, 129. *Catocala nymphagoga* Esper and *Herminia zelleralis* Wocke: Two Species of Noctuidae New to Britain, I. J. L. TILLOTSON, 133. An Inquiry into the British Status of *Gymnetron plantaginis* Epp. (Col.: Curculionidae), A. A. ALLEN, 135. The White-letter Hairstreak: a National Survey, C. PEACHEY, 139. The Immigration of Lepidoptera to the British Isles in 1982, R. F. BRETHERTON and J. M. CHALMERS-HUNT, 141. Relationship between *Nordmannia esculi* Hbn. (Lep.: Lycaenidae) and *Camponotus cruentatus* Lat. (Hym.: Formicidae), J. MARTIN and P. GURREA, 153. Early Stages of the African Nymphalid *Neptidopsis fulgurata platyptera* Roths. and Jordan, R. C. DENING, 155. A Check-list of Breeding British Moths (Macrolepidoptera), C. I. RUTHERFORD, 157. A Modern Review of the Demise of *Aporia crataegi* L.: The Black-veined White, C. PRATT, 161.
- NOTES AND OBSERVATIONS, 132, 152, 154, 156, 166-171.
CURRENT LITERATURE, 134, 140, 171-172.
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TO OUR CONTRIBUTORS

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THE ENTOMOLOGIST'S RECORD

AND JOURNAL OF VARIATION

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PLATE II



Aloeides maluti sp. nov.

Fig. 1. Male holotype (upperside), Rafoelatsane, Lesotho, V. L. Pringle, 17.i. 1976. Fig. 2. Idem (underside). Fig. 3. Female allotype (upperside), Rafoelatsane, Lesotho, E. L. Pringle, 17.i.1976. Fig. 4. Idem (underside). Figures approx. 2x natural size. Photograph reproduced by Unifoto (Pty) Ltd., Cape Town.

A NEW LYCAENID BUTTERFLY FROM LESOTHO,
OF THE GENUS *ALOEIFIDES* HUEBNER

No. 1

By E. L. PRINGLE, B.A. (Natal), LL.B. (U.C.T.)*

Aloeides maluti spec. nov.

This striking insect was found in the heart of the Lesotho highlands. In appearance, it combines the characteristics of *Aloeides pierus* (Cramer) and *Aloeides trimeni* Tite & Dickson, coming closer to the former on the upperside, and to the latter on the underside.

Male (Upperside).

Forewing. Heavy black borders extend along the distal portion of the wing, extending inward as far as a third of the way along vein 1, and a quarter of the way along veins 3, 4 & 5, and their corresponding areas; and, with great inward expansion of the black area subapically and below the costal margin. The remaining inner area of the wing exhibits a dusky orange colouration. There is, however, a marked degree of variation among individual specimens in some of which the wing is almost entirely suffused with black, leaving a very reduced orange area basally. Veins are all dusted with black, and the cilia are faintly chequered. In comparison with *pierus*, *maluti* males show a greater extent of orange on both fore- and hind-wing uppersides, with none of the specimens examined showing the extreme reduction of the orange area on these wings evidenced by many specimens of *pierus*. Further, the orange colouration in all specimens of *Al. maluti* is more dusky in appearance than in *pierus*. Another feature is that, in all examples studied, the males of *pierus* show blackish markings at the base of the forewing: in this species, however, the males always show dusky orange at the base of this wing.

Hindwing. As in the forewing, all veins are dusted with black, and the cilia are faintly chequered. Black lunules are evident along the distal margin, and the apical patch is well-developed, if variable. In some of the specimens examined, the apical patch extends all the way through area 4, up to vein 4, and inwards all the way to the base. In the majority of specimens examined, however, the apical patch extends only as far as vein 5, and inwards only half-way along vein 7. The remainder of the hindwing bears the same dusky orange markings evidenced in the forewing.

Female (Upperside).

Forewing. The wings are more rounded than in the males, and the dusky orange markings are more extensive. The broad black band along the distal margin does not reach further inwards than one-third of the way along veins 1 and 2, and approximately a quarter of the way along veins 3, 4, 5 and 6. In all specimens examined, the apical patch is bisected by two, and in some cases three, orange dots extending towards the costa. Veins are dusted with black, and the cilia is lightly chequered.

Hindwing. Similar to the male, except that the apical patch is much reduced. As in the male, the female shows a much greater extent of orange on the upperside of the wings than does *pierus*, and the orange basic colour is more dusky in appearance.

Male and female (Underside).

Forewing. The basic colour is dusky orange. Dull brown markings extend into the apical area, and down, or close to, the costal and distal margins. The spots of the submarginal series are placed well within the orange portion of the wing in areas 1b, 2, 3 and 4 and beyond these areas, above the orange

*Huntly Glen, Bedford, 5780, South Africa.

field. These spots are, as in *pius* but not as in *trimeni*, black, and are not touched inwardly with white. Otherwise, the spotting is fairly typical of the genus *Aloeides*, consisting of well-defined silver spots edged with black rings, and arranged in an irregular postmedian series of five spots, together with a discoidal spot, median cell-spot and a basal cell-spot.

Hindwing. Basic colour dark greyish-brown, showing in some cases a very faint light suffusion towards the distal margin. Like *trimeni*, and unlike *pius*, the hindwing colouration is extremely uniform, showing none of the dappled maroon or dappled sandy colours exhibited by *pius*. Unlike both species, *maluti* shows no tendency towards any variation of the basic colour of this wing, and none of the specimens examined show any trace of the maroon basic colour often seen in both *trimeni* and *pius*. There are a number of large, round, dull silver spots in this wing: these spots are not elongated as in *pius*, but are consistently large and rounded. All specimens exhibit three, and in some cases four, sub-basal spots, as well as a median costal spot. The remaining spotting is highly irregular, and varies considerably between specimens. In at least one specimen examined, the median series of spots is arranged in a continuous band, running all the way from the costal to the inner margins. The majority of specimens examined, however, exhibit only three spots lying adjacent to one another in areas 6 and 7, and a further three suffused spots in areas 1c, 2 and 3. This spotting does not, therefore, show the uniform and characteristic pattern seen in *pius*, which in all cases exhibits a distinct break in the median series of spots at vein 4. Similarly, since the median series in *trimeni* also shows a regular and consistent pattern, the species can in this respect also be distinguished from *trimeni*. Further, the underside spots are much larger and fewer in number than in *trimeni*, and the black rings encircling these spots are markedly more pronounced.

This species was discovered by the author and his father on an expedition to Lesotho in January, 1976. It was found near the village of Rafoelatsane, flying on the summits and slopes of low-lying hills and ridges. Specimens were encountered singly, and the species, though widespread, was found to be uncommon. The species was again encountered on two subsequent trips to the area in February, 1977 and January 1979, and on both of these expeditions was once more observed to be unusually scarce. This may in part be as a result of the heavy erosion and destruction of the environment sustained by the low-lying sandstone ridges upon which it flies — caused in turn by the over-population and over-grazing characteristic of most areas of Lesotho.

The species is named after the lofty and spectacular range of mountains which traverses the western areas of Lesotho.

I would like to place on record my sincere thanks to Mr. C. G. C. Dickson for the great assistance which he has rendered me in preparing this paper.

HOLOTYPE: Rafoelatsane, Lesotho 17-1-1976 (E. L. Pringle)

ALLOTYPE: Rafoelatsane, Lesotho 17-1-1976 (E. L. Pringle)

PARATYPES: Rafoelatsane, Lesotho 1 ♂ 1 ♀ 17-1-1976 (V. L. Pringle); 2 ♀ 17-1-1976 (E.L.P.); 1 ♀ 2-2-1977 (V.L.P.); 1 ♂ 2-2-1977 (V.L.P.); 1 ♂ 1 ♀ 20-1-1979 (V.L.P.); 1 ♀ 5-2-1977 (E.L.P.); 3 ♂ 2 ♀ 22-1-1979 (E.L.P.); 3 ♂ 1 ♀ 22-1-1979 (V.L.P.).

Two paratypes will in due course be presented to the British Museum.

A REVIEW OF BRITISH BUTTERFLIES IN 1982

By DR. C. J. LUCKENS*

Contrast between the two seasons of 1981 and 1982 could hardly have been greater. Whereas the former year was characterised by reduced populations in nearly all our native species, last year saw a very welcome revival for many of them. Once again weather seemed to have been the important factor, with fine settled conditions at the critical times in April, May, June and August.

The season started off well in mid-March in southern England with hibernators such as *Gonepteryx rhamni* L., *Nymphalis io* L. and *Polygonia c-album* L. in good numbers and *Aglais urticae* L. in some abundance. April was warm and sunny almost throughout, and this enabled all these species to produce excellent summer and autumn broods.

Pararge aegeria L. is often the first newly emerged butterfly to appear in this area. I saw many of these early specimens in sheltered spots in our garden from April 4th onwards. The later summer broods of the Speckled Wood were slightly disappointing in southern England, however, and no more than average numbers appeared. An example of a third brood was recorded from Easter Ross on October 3rd. This is perhaps unusual for the colonies in north east Scotland, though an autumn brood appears regularly in the milder coastal areas of the western Highlands. The Wall Brown, *Lasiomata megera* L. seemed to vary in abundance from region to region. In Cumbria it was considered to have had a below average season, but it was reported commonly in the west Midlands, and in the late summer brood did very well on the chalk of Sussex and Wilts. I found it abundant on the edge of the downs near Stockbridge in early August. In the west Midlands, *Melanargia galathea* L. once confined to local colonies, continued its spread and was abundant at Ledbury. The Winchester colonies seemed slightly weaker, though there was a good showing at Stockbridge in late July, and also in the Warminster area. In Sussex (Brighton area) it was below average and apparently had not recovered from its poor season in 1981. Many recorders noted the abundance of *Eumenis semele* L. in its favoured localities. The Portland colonies were selected for special mention with *ab. holanops* and *ab. monocellata* appearing among the old quarry workings. The Grayling was also common elsewhere along the Dorset coast – in the Lulworth area and around Swanage and the colonies on limestone grassland in Cumbria and in the Malverns did well. Most interestingly it seems to be recovering on the Kentish chalk and there was an encouraging report of it building up numbers at its former haunts at Folkestone. It also appeared in the Swans-

*Swallowfield, Manor Road, Durley, Hants SO3 2AF.

combe area in Kent and on the Downs near Compton in the Isle of Wight. *Maniola jurtina* L. and *Pyronia tithonus* L. both had an exceptionally good year in southern England. The latter literally swarmed in the lanes in this area of south Hants, and there were equally favourable reports from north Dorset and Wilts for both these species. News from Cumbria was slightly less favourable, where there has been apparently a gradual decline of *jurtina* over a number of years. In spite of the general increase of these two Satyrids very few aberrations of any kind were recorded. At the well known site at Arnside *Erebia aethiops* Esp. appeared to have done well in 1982. Good numbers were seen in early August, and contrary to the statements in many text books, the butterflies were recorded flying of their own accord in dull windless weather conditions. Another success story in 1982 concerned *Aphantopus hyperantus* L. After several seasons of relative scarcity this butterfly showed a definite increase in Hampshire. From Dorset came a report of six ab. *arete* seen in one day and several of this variety were noted in the Warminster area of Wiltshire.

The two Pearl-bordered Fritillaries *Clossiana selene* D. & S. and *Clossiana euphrosyne* L. continued to thrive near here at Botley Wood. I saw many *euphrosyne* in mid-May but was out of the country for the main *selene* emergence. Several ragged examples were flying in late June and the habitat so far remains ideal for these two attractive butterflies. Both species were reported numerous in Wyre forest last year and also in several localities in Cumbria. *Selene* apparently outnumbered *euphrosyne* in both these two areas but the opposite was the case at Parkhurst forest, Isle of Wight, where the Small Pearl-bordered Fritillary was rather scarce. One butterfly that seems to have decreased in this area over the last few years is *Argynnis aglaia* L. and the fine weather of 1982 did not seem to halt this trend. It was described as a poor year for the Dark Green Fritillary in north Dorset and Lulworth and from the Downs around Warminster. In south Cumbria it is also rather thinly scattered, but *Argynnis adippe* F. on the other hand is flourishing in this area around the Kent estuary. The High Brown also appears to be thriving in Wyre Forest though colonies elsewhere in the west Midlands were reportedly slightly down on numbers. In Wiltshire, where *adippe* seems to have just hung on in some areas, one correspondent made a search of the usual localities and failed to see it at all. Only small numbers of *Argynnis paphia* L. appeared around Warminster last year, but it seems to have had a better year in its haunts elsewhere in England. Particularly good numbers were noted around Duford and Cranleigh and f. *valezina*, formerly very scarce in this area of the Surrey/Sussex border, also made an appearance. On the Isle of Wight, however, *valezina* was not uncommon in 1982 and it also occurred fairly frequently in the Cranborne area of Dorset. In Wyre forest *paphia* appeared in good numbers and was recorded

as early as June 30th *Euphydryas aurinia* Rott. had the benefit of excellent weather for its flight period in late May/early June. Reports from Dorset were generally favourable and the isolated Worcestershire colony also had a good year. The Cumbrian colonies however appear to be in serious decline. Of five remaining localities visited by one correspondent, only three still held the butterfly and then in very small numbers, (less than ten seen in any one locality). On the southern coastal strip of the Isle of Wight *Melitaea cinxia* L. was reported locally abundant in 1982, the best colonies being at Compton, and around St. Catherines Point. *Mellicta athalia* Rott. was not uncommon locally in Blean Woods and two recorders noted evidence of colonisation of new sites. There seems to have been an exceptionally long emergence period last year, as worn specimens of the Heath Fritillary were noted as early as June 1st and fresh examples were still flying on July 7th. I have no reports of the formerly thriving west country localities but I am informed they are under pressure from a variety of factors.

A welcome abundance of *Vanessa atalanta* L. was a feature of 1982. Early examples were reported in late April and by late May *atalanta* was building up numbers to a remarkable extent. All through the summer, from late June onwards, larvae were common on the nettles in our garden, and I finally saw a specimen sunning itself on the roof of our house on a warm day in mid-November. This abundance of the Red Admiral seems to have been noted from southern England to Easter Ross. It was recorded as far north as Durness, Sutherland, on June 7th. *Vanessa cardui* L., on the other hand, I found rather scarce in southern Hampshire, though elsewhere good numbers were recorded in the late season. I have mentioned already the excellent numbers of the commoner Nymphalidae in 1982, but a particular interesting record is of *Nymphalis io* L., caught and photographed on June 26th by the R.S.P.B. warden on Handa, Sutherland. This seems an exceptionally early date for a newly emerged peacock so far north. I have seen hibernated specimens in Argyll as late as June 10th and I wonder if this was the status of the Handa specimen. *Apatura iris* L., The Purple Emperor, seemed to have enjoyed another favourable year. I saw a few examples in local woodland, and on July 3rd a superb, newly-emerged male displayed on the road in front of me in south west Wilts. In west Sussex and Surrey it apparently had an excellent season. Unfortunately one report was received of large numbers of *iris* having been taken by individual collectors in this area. I have no wish to stir up controversy about this. The Purple Emperor is not endangered by moderate collecting, but if individuals are irresponsible and excessive there may be a call for yet more restrictive legislation. Undoubtedly the greatest threat to *Apatura iris* L. comes from forestry policy. Creating a "Conservation Area" in south west Wilts where the butterfly was already common, then subse-

quently devastating the woodland, is an unhappy example of this.

The White Admiral *Limenitis camilla* L. has had similar problems in recent years. It seems to be slightly more subject to adverse meteorological conditions. In 1982 it was reported in good numbers in west Sussex and is reappearing in some Wiltshire and Hampshire localities where it has been virtually absent for several years. It also appears to be extending its range in Worcestershire and Shropshire.

1982 was generally a very favourable year for *Hamearis lucina* L. It was described as "holding its own or better", in Westmorland. In north Dorset and in the Hampshire chalk localities it appeared in strength. In east Kent the Duke of Burgundy had declined almost to extinction in 1980 and 1981 but now appears to be on the increase again. Few records were received of *Cupido minimus* Fuessl. Small numbers were seen flying with *cinxia* on the Isle of Wight; specimens were noted imbibing moisture at Downe in Kent and a second brood was recorded in August from Banstead Downs, Surrey. Two reports of *Aricia artaxerxes*, F. concerned the Witherslack colonies. Though remaining local, these limestone colonies were found to be flourishing in 1982. The Common Blue, *Polyommatus icarus* Rott. produced a good second brood nearly everywhere, but had a patchy time earlier on in the year. The same applied to *Lysandra bellargus* Rott. which was reported in good numbers as early as May 9th at Ranmore, Surrey, and produced a healthy second generation in late August/September in many of its colonies. There was a prolonged emergence in the second brood; it was recorded as early as August 15th at Corfe and I saw fresh females in mid September along the Dorset coast path near Swanage. In Sussex *bellargus* improved on its 1981 showing and it also appeared in a new locality near Warminster, Wiltshire. In the Queensdown area, Kent, *bellargus* occurs in one or two sites and in these was described as fairly common. This beautiful 'blue' was also seen commonly in one locality on the Isle of Wight. *Lysandra coridon* Poda. also made something of a comeback in 1982 after several very lean years: at Portland ab. *fowleri*, ab. *caeca* and ab. *obsoleta* forms were reported. The Warminster colonies recovered slightly but the *coridon* population there has been at a very low ebb recently. It was interesting to hear of signs of local recovery in the case of the Holly Blue, *Celestrina argiolus* L. I saw one in May on Southampton Common and a few near Bishops Waltham in late July. A few also were seen in Breconshire and it was recorded at Folkestone as late as August 26th. It became comparatively plentiful in Kew, Surrey, however in both spring and summer broods and it is also making something of a comeback in the Lewes area of Sussex.

One butterfly that was consistently reported as scarce throughout was *Thecla quercus* L. — the only exception being a report from Banstead, Surrey, where it was seen in numbers on August 1st. *Thecla betulae* L. on the other hand had a good year. I esti-

mated the number of winter ova near Selborne to be higher than usual and in the lanes north of Oxford around the Bucks border, Dr. T. W. Tolman and I found ova almost ubiquitous in hedge-rows and wood borders in January of this year. A count was made of ova in the isolated localities in Worcestershire and favourable numbers were reported from there also. Sporadic reappearance of *Strymonidia w-album* Knoch. also seems to have been a feature of 1982. It was reported from near Orpington Kent and a sprinkling of sightings were made in Worcestershire, Shropshire and near Hereford. A healthy colony was discovered on the Isle of Wight in 1981 and this was holding its own in 1982. It still occurs in the woods west of Winchester, but a search for ova on a healthy wych elm, where *w-album* used to occur only two miles from my present home, resulted in disappointment. Its congener *Strymonidia pruni* L. was present in numbers in at least one south Bucks locality in 1982 and in the same area the editor and I saw one or two resting in the blackthorns during a day of continuous rain at the end of June.

Leptidea sinapis L. had a good season in west Sussex near Plaistow, and, though down on numbers slightly in the west Midlands, it was reported as extending its range in Worcestershire and Hereford. I personally found *Antocharis cardamines* L. abundant in south Hants in 1982, but in Wiltshire it was apparently less common than usual and in Cumbria it is apparently becoming scarcer each year. The Spring Skippers *Erynnis tages* L. and *Pyrgus malvae* L. were both up to strength in south Hants, Dorset, Wiltshire and Wyre Forest, Worcestershire. On the other hand both were reported as very scarce in Sussex in 1982. *Tages* was also generally uncommon in Cumbria. A new locality was discovered in east Scotland, near Rosemarkie, where the Dinky Skipper is a very local insect indeed. *Thymelicus lineola* has apparently almost replaced the closely related *Thymelicus sylvestris* in the Isle of Sheppey and this has been taking place gradually over the last ten years. *Lineola* is also spreading along the Sussex coastal strip to west of the Adur Valley and in many places is present in good numbers. The very local butterfly *Hesperia comma* L. had a thoroughly successful year in this area of Hampshire where there are two good strong colonies. The best of these is undoubtedly that near Broughton, where the butterfly was out in force in the first fortnight of August. It was also fairly plentiful in the east Kentish locality near Dover, which is probably its last stronghold in Kent. A rediscovered locality near Stroud, Gloucestershire, apparently revealed only one example last year, but I am informed the habitat is not ideal for it there. The fine last summer weather in 1982 led into a very wet autumn. The weather remained fairly mild however and many of the hardier butterflies were seen well into October and November. It will be interesting to see whether the wet, mild, winter will offset the generally favourable butterfly season of 1982.

Acknowledgements

I would like to thank the following for their contributions to this review: Messrs. A. J. Baldwin, R. D. Barrington, J. M. Chalmers-Hunt, F. H. Clouter, R. M. Craske, P. A. Cross, M. J. Y. Foley, J. E. Green, G. C. Haines, M. S. Harvey, D. C. Hulme, M. Oates, H. G. Phelps, J. Platts (per J.M.C.-H.) P. J. Sankey-Baker (per J.M.C.-H.) P. A. Sokoloff, Rev. J. H. Vine-Hall, and Miss E. J. M. Warren.

THE QUEEN OF SPAIN FRITILLARY REARED FROM EGGS. — I was very sorry to learn of the death of Mr. T. D. Fearneshough (*Ent. Rec.*, 95: 114), whose notes I enjoyed reading over many years. The reference to his successful breeding of *Argynnis lathonia* L. (Queen of Spain Fritillary) is of special interest to me. Mr. O. G. Watkins, with whom I corresponded over the years, although we never met, kindly sent me several eggs of the same butterfly in 1949, and I reared no less than five butterflies. They emerged in the autumn of that year, and they are now in my collection. The larvae fed on pansy leaves. — G. E. HYDE, 26 Warrington Drive, Bessacarr, Doncaster, S. Yorkshire DN4 6SS.

AGLAIS URTICAE L. AB. NIGRA TUTT. — A fine example of this rare aberration occurred in August 1982 near Dosthill Quarry, Tamworth, Staffs. As it flew from thistle head to thistle head, it was immediately distinguishable from the normal small tortoiseshells it was amongst, of which there were about 300 on two extensive patches of thistle. The specimen was first seen on the 27th, and again on the 28th and 31st of August. A good photograph was taken of it and submitted to the Editor of the *Record*. — P. B. DARCH, 9 Maxstoke Close, Dosthill, Tamworth, Staffs, B77 1NP.

COURTSHIP AND PAIRING IN *INACHIS IO* L. — Courtship and pairing of butterflies is not a frequently observed event and I don't previously recall observing this in *Inachis io* L.. On 16th April, a warm sunny day, peacocks and small tortoiseshells were flying frequently in and across our garden at Caversham. Towards mid afternoon two peacocks were indulging in an interesting flight pattern, one butterfly following the other in a fairly straight flight path and both insects exhibiting an unusual regular fluttering of wings. After making two of these purposeful looking flights the pair suddenly flew out of view under the eaves of a garden shed and I went down to investigate. Both butterflies were found sitting quietly *in copula* in a dark corner — it was 3.45 p.m. Two hours later they were still in the same position and they were left undisturbed until 9.30 a.m. the following morning. By that time one of the pair, presumably the male, had disappeared, but the other butterfly remained under the eaves for another three days, each of these days being cool and wet. By the fourth day sunny, warm weather had returned and, as expected, the remaining butterfly had flown sometime before 9.30 a.m. — B. R. BAKER, 25 Matlock Road, Caversham, Berks.

FOUR SPECIES OF *MEGASELIA* (DIPTERA:PHORIDAE)
NEW TO BRITAIN FROM HAYLEY WOOD,
CAMBRIDGESHIRE

By R. H. L. DISNEY*

Hayley Wood, Cambridgeshire (Grid ref. 52/2953) is a Grade I Site of Special Scientific Interest (Site W. 40 in Ratcliffe, 1977). It was with interest, therefore, that I examined collections of scuttle flies made by D. M. Unwin, during 1980, in this famous wood. The collections represented specimens of more than 70 species. Only ten species did not belong to the giant genus *Megaselia*. Among the latter four species are new to the British List. They are detailed below.

Megaselia aculeata (Schmitz, 1919).

Males of this species are readily distinguished from related species by the presence of a pair of sclerotised plates, bearing bristles, situated on the venter of abdominal segment 6 (see fig. 255 in Schmitz, 1958).

Four males were recorded from Hayley Wood, two in June and two in September. In addition P. J. Chandler has sent me a male caught on 25 May 1980 at Chippenham Fen, Cambridgeshire (Grid. ref. 52/6469). I have also caught a male at Flatford Mill, Suffolk, (Grid ref. 62/079330) in August 1981. The species has previously been recorded from Germany, Holland and Portugal.

Megaselia insons (Lundbeck, 1920).

This species is more variable than has been supposed and only some specimens will key out correctly in Schmitz's (1957) Key. However, I have confirmed the identity by comparison with the type (kindly loaned by Dr. Lief Lyneborg, Zoologisk Museum, Copenhagen, Denmark).

Six males were recorded from Hayley Wood, three in June, one in July and two in August. I have collected it from Flatford Mill, Suffolk (Grid ref. 62/080329) in August 1981; from Malham Tarn, North Yorkshire (Grid ref. 34/889673 and 34/893673) in June 1976 and June 1982; from Aviemore (Grid ref. 28/893112) in July 1982; and D. Henshaw collected it at Waltham Abbey, Essex (Grid ref. 52/3-0-) in May, 1982.

The species has previously been recorded from Austria, Germany, Denmark, Holland, Portugal and Poland.

Megaselia intercostata (Lundbeck, 1921)

The costal index and costal cilia of the single specimen from Hayley Wood (collected in June) are a little longer than as given by Lundbeck (1922) and Schmitz and Beyer (1965). However I have

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confirmed the identity by comparison with the type (kindly loaned by Dr. Lief Lyneborg). A detailed description in English is given by Lundbeck (1922).

The species has previously been recorded from Austria, Germany, Denmark, Holland and Poland.

Megaselia subconvexa (Lundbeck, 1920)

Males of this species can be readily distinguished from several similar species by the upper part of the epandrium forming a curious, collar-like development around the base of the anal tube (see figs. 355 and 356 in Schmitz and Beyer, 1965).

Five were collected in Hayley Wood, in August and September. In addition P. J. Chandler collected a single male at Chippenham Fen on 25 May 1980.

The species has previously been recorded from Austria, Denmark and Holland.

Acknowledgements

I am grateful to the Royal Society for grants to support my investigations of Phoridae.

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APOTOMIS SAUCIANA SAUCIANA FRÖLICH (LEP.: TORTRICIDAE) IN KENT. — From two larvae collected 18.v.1982 whilst sweeping the Bilberry at Oldbury Hill, Nr. Sevenoaks, a single adult emerged on 21.vi.1982. The foodplant is very local in the county and restricted to the sandy areas of the south-west, and it is possible that this species is very scarce in Kent as I am not aware of any recent records. — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

NOTES ON SCOTTISH MICROLEPIDOPTERA, 1982

K. P. BLAND*

The following species of special note have come my way in 1982; *Diplodoma herminata* (Geoff.) Larvae of this species were found in a rather unusual location on 9 & 25.iv.1982 in Meggernie and Gallin Pinewoods, Perthshire (O.S.Grid NN/5244, 5545 & 5645; V.c.88). They were among the debris behind the loose bark of dead Caledonian Pines — in one instance they were as much as 2 feet above the ground. An imago emerged on 25.v.1982. Larvae of this species were also found on the latter date (25.iv.1982) in a roadside oakwood at Balnaguard, Perthshire (O.S.Grid NN/9451; V.c.88). These were in the more typical location of just above the ground litter in the buttressroot angles at the base of large oaks. They produced an imago on 30.v.1982.

Bucculatrix cristatella Zell. In 1894, William Evans (Evans, 1897) recorded *Bucculatrix cristatella* from Pettycur, Fife (V.c.85). This has remained the only Scottish record for this species until present. On 29.v.1982 a search of *Achillea millefolia* at Pettycur (O.S.Grid NT/2686) yielded a single empty *Bucculatrix* moulting-cocoon. A further search on 31.vii.1982 was more successful yielding several empty moulting-cocoons and 5 pupation-cocoons; the latter producing imagines of *B. cristatella* between 1-5.vii.1982. Its persistence in its former locality was thus established. Subsequently vacated *Bucculatrix* moulting- and pupation- cocoons on *Achillea millefolia* were found at Seton Bents, East Lothian (O.S. Grid NT/4376; V.c.82 on 10.viii. 1982) and Duddingston Loch, Edinburgh (O.S. Grid NT/2872; V.C.83 on 12.viii.1982) suggesting that it is quite widespread in the Forth region.

Glyphipterix equitella (Scop.) Three imagines of this species were taken about *Sedum acre* on Arthur's Seat, Edinburgh (O.S. Grid NT/2772; V.c.83) on 4.ix.1982. This appears to be only the second record of this species from Scotland; it previously having been taken at Moncreiffe Hill, Perthshire in the 1870s (Moncreiffe, 1880).

Coleophora albitarsella Zell. This species was bred from larval cases found feeding on *Origanum vulgare* (Marjoram) at Aberdour, Fife (O.S.Grid NT/1985; V.c.85) on 9.v.1982. An imago emerged on 22.vi.1982. Cases of this species have been collected at this location previously (6.xi.1977) but failed to produce imagines. This appears to be the first recorded locality for this species in Scotland.

Coleophora lithargyrinella Zell. A small coleophorid larva was found feeding on *Stellaria holostea* near Hartside, Berwickshire
*35 Charterhall Road, Edinburgh EH9 3HS.

(O.S.Grid NT/4753;V.c.81) on 9.viii.1981. The imago was successfully reared (emerged 16.vi.1982) and proved to be *Coleophora lithargyrinella*. This appears to be the first record for this species in Scotland.

Syncopacma sangiella (Stt.) Several dark larvae in spun shoots of *Lotus corniculatus* collected on Cramond Island, Midlothian (O.S.Grid NT/1978; V.c. 83) on 29.v.1982, produced imagines of this species on 10-28.vii.1982. Although known from Scotland for a long time, this species appears to have been recorded only from Kincardinshire (V.c.91) and Aberdeenshire (V.c.92 & 93) (Hulme, Palmer & Young, 1978).

Dichrorampha alpinana (Treits.) Four females of this species were bred from larvae in the rootstocks of *Chrysanthemum leucanthemum* collected on 31.v.1982 at Blackford, Edinburgh (O.S.Grid NT/2571;V.c.83). Imagines emerged between 6-10.vi.1982 and appear to be the first specimens of this species recorded in Scotland (Bradley, Tremewan & Smith, 1979).

Chilo phragmitella (Hbn.) Several worn specimens of this species came to M.V. light by the *Phragmites* bed at Adderstonelee Moss, Roxburghshire (O.S. Grid NT/5311;V.c.80) on 3-4.viii.1982. This species seems to be rather uncommon in Scotland, only having been recorded previously from Mid-Perthshire (1959) and the Tay Estuary (1967).

Acknowledgements

In preparing these notes liberal use was made of the Scottish Insect Records Catalogue at the Royal Scottish Museum, Edinburgh by courtesy of Dr. M. R. Shaw.

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THE PINE HAWK: *HYLOICUS PINASTRI* L. IN WARWICKSHIRE. — On the 28th June 1982, a worn male of this species visited the light trap here at Charlecote. This appears to be the first record of this species for the county. — A. F. J. GARDNER, Willows End, 29 Charlecote, Nr. Warwick.

A FEW INSECTS FROM MONTSERRAT,
WEST INDIES

By J. COOTER*

In view of the apparent paucity of records from this small member of the Leeward Islands, I thought it worthwhile to list the few species captured by my father and myself during a brief visit in 1975. Montserrat is about 30 miles south-west of Antigua, 16° 45' N, 62° 14' W.

None of the residents we came into contact with could recall entomologists visiting the Island, but there are a few records in Blackwelder, R.E. (Checklist of the Coleopterous Insects of Mexico, Central America, the West Indies and South America. *United States National Museum Bulletin* 185, parts 1-6 (1944-1957)). Of the few species recorded here, only two are listed by Blackwelder as occurring in Montserrat (indicated by an asterisk*).

Lepidoptera: *Anartia jatrophae* Johanss., Salem, 4.ix.

Odonata: *Lepthemis vesiculosa* F., *Orthemis ferruginea* F., *Triacanthagyna trifida* Rambur and *Erythrodiplax umbrata* L., all in flight around a pool at the road side near the sports stadium between Plymouth and Richmond Hill, 31.viii.

Dermoptera: Carcinophoridae — *Euborellia stali* (Dohrn) ♂ ♀ (det. A. Brindle) Richmond Hill, 28.viii.

Coleoptera: Histeridae — *Atholus confinis* (Er.) (det. J. Théron) Richmond Hill, 28.viii. Scarabaeoidea — *Ligyris cuniculus* (F.) (det. R. D. Pope) Richmond Hill, 31.viii., dead specimens floating in swimming pool. Elateridae — *Heteroderes* sp. (det. C. M. F. v. Hayek) Spanish Point, 31.viii. (no species recorded by Blackwelder from the Leeward Islands). Cantharidae — genera and species indeterminate (det. E. R. Peacock) Salem, 4.ix. (3ex). Lampyridae — *Aspisoma ignitum* L. var. *polyzona* Chev. (det. E. R. Peacock) Richmond Hill, 29.viii. (3ex). Dermestidae — *Trogoderma ornatum* Say ♀ (det. E. R. Peacock) Richmond Hill, 29.viii. Coccinellidae — *Cycloneda sanguinea* (L.) (det. R. D. Pope). Tenebrionidae — *Phaleria fulva* Fleut. & Salle (det. C. A. Triplehorn) 17 examples under a dead fish on the beach at Foxes Bay, 6.ix.; *Crypticus* sp. Botanic Gardens, Plymouth (Blackwelder lists no species from the West Indies). Cerambycidae — *Eubria decemmaculata* F., Richmond Hill, 29.viii., at light. Chrysomelidae — (all det. S. L. Shute) — *Metriona trisignata* Bohm., Salem, 4.ix. (2 ex); *Galerucella tropica* Jac. Plymouth, 29. viii.; *Homophoeta albicollis* F. Richmond Hill, 31.viii. (8ex); *Lema* sp. indeterminate, Salem, 4.ix. (2ex), Curculionidae — (all det. R. T. Thompson) — *Sitophilus linearis* (Hb.) "The Tamarind Weevil", common in ripe tamarind pods, Richmond

*20 Burdon Drive, Bartestree, Hereford.

Hill and Old Towne; *Diaprepes abbreviatus* (L.)* Plymouth, 2.ix. (ex); *D. famelicus* (01.) Plymouth, 30.viii. (4ex), Spanish Point, 31. viii. (2ex), Upper Galways Estate 3.ix. (2ex); *Lachnopus* species, *curvipes*-group Richmond Hill, 29.viii (lex), Plymouth, 30.viii. (3ex), Spanish Point 31.viii (lex) (no *Lachnopus* species are recorded from Montserrat by Blackwelder); *Litostylus pudens* (Bohe- man)* Plymouth, 28.viii. (lex) Spanish Point, 31.viii. (lex); *Pseudo- mus* species indeterminate, Richmond Hill, 30.viii. Salem, 8.ix (no *Pseudomus* species recorded by Blackwelder from the Lee- ward Islands).

Examples of all the Coleoptera have been donated to the British Museum (Natural History), London. I would like to ex- press my thanks to Martin Brendell (BM(NH)) and to all the other authorities who determined material. I am also grateful to Mr. and Mrs. E. Herman for generous hospitality afforded to us while on Montserrat.

POSSIBLE DEFENCE REACTION OF XYLOCAMPA AREOLA
ESPER (LEP.: NOCTUIDAE) PUPA. — On 25th July, 1982, a
silk cocoon containing a pupa of *Xylocampa areola* Esp., the Early
Grey, was discovered on a piece of sack-cloth in a garden shed at
East Ham, Essex, when I promptly placed this in a suitable container
and put it on one side for the winter. I did not examine it again
until 14th August, 1982, when I was surprised to discover that a
noise seemed to be produced from the cocoon when it was picked
up.

Employing a 100 watt light bulb to "candle" the cocoon, (as
one would a chicken egg to monitor embryo development), it was
possible to see that the noise, which resembled the crushing of dead
leaves under foot, was produced by rapid vibration of the abdominal
segments of the pupa against the internal walls of the extremely
rigid cocoon. The sound produced was clearly audible 4 metres
away across the room.

I can only assume that this is some form of defensive reaction;
it certainly startled me, although one has serious doubts as to the
value of causing a predator to drop a rigid silk cocoon which is then
completely unable to escape further attack. Since the cocoon was
firmly stuck to the surface upon which it was found however, it
may simply be that the noise acts as a deterrent to more casual
predators that might investigate the cocoon and be simply scared
away by the sudden noise. I cannot see it being terribly effective
however!

The moth, a male, emerged on 12th May, 1983, having been
kept on a west facing window-sill inside an unheated room since
its discovery. — C. W. PLANT, Assistant Curator, Natural Sciences
(Biology), Passmore Edwards Museum, Romford Road, Stratford,
London, E15 4LZ.

MICROLEPIDOPTERA – A REVIEW OF THE YEAR 1982

Compiled by DAVID J. L. AGASSIZ*

This is the third year I have attempted to compile this review, but the first time it has been such a joyful account of interesting records and discoveries, thanks largely to better weather in 1982.

It is also the first attempt at a rather more comprehensive set of records. I approached a number of field entomologists around the country and the response has been very encouraging. It is hoped that the list of records included will be of greater use to researchers in future years.

Pride of place must go to the discovery of species new to Britain: an *Agonopterix* species was found to be resident by Dr. J. R. Langmaid and E. C. Pelham-Clinton; each had taken an adult in earlier years and their search for larvae was duly rewarded – we await publication on this with great interest. In a similar category is a *Coleophora* species bred by N. F. Heal; this was first exhibited as *C. suaedivora* Meyr. but further investigation proved it to be a different species – a paper on this is also awaited. It is possible that these species have yet to be described and named.

Two specimens of *Elachista littorcola* Le Marchand were taken by E. H. Wild in South Hampshire; its status has yet to be established, but it could well be resident. A single *Zophodia convolutella* Hb. was taken in Kent by J. Roche; this large Phycitid could easily gain a foothold for it is sometimes a pest on the Continent.

On the outskirts of London a specimen of *Argyresthia trifasciata* Staud. was taken by R. A. Softly and it will be interesting to see whether this has become established on cultivated junipers. Although first taken in 1954, it was not until 1982 that *Plutella haasi* Staud. was correctly identified by the Finnish entomologist Dr. J. Kyrki. A single specimen was taken by Canon G. A. K. Hervey in western highlands of Scotland where it must surely be resident.

Leucinodes orbonalis (Guen.) was added to the list of casual imported species by H. E. Beaumont who bred one from an aubergine.

Although it had been recorded from Ireland, *Coleophora ramosella* Zell. was taken for the first time in the United Kingdom by N. F. Heal who works so well on that group. Also confirmed as resident on the British mainland was *Luffia lapidella* Goeze complete with males! Hitherto only the parthenogenetic females of *L. ferchaultella* Steph. have been found except in the Channel Isles, but Dr. F. H. N. Smith in Cornwall has remedied the position.

Recent arrivals in Britain continued to be found: *Dioryctria*

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schuetzeella Fuchs was taken in Kent again by several entomologists, but as yet there is little evidence of spread further afield. It is encouraging to hear that *Bisigna procerella* D. & S. seems to have a good foothold in or near its original locality in East Kent, where J. M. Chalmers-Hunt and others have taken specimens. *Metzneria aprilella* H.-S. has been found much more widely than its discovery in central southern England suggested, with records coming from Yorkshire and East Anglia. *Stigmella samiatella* Zell. is found by A. M. Emmet to have a yet more sure base in north-east Essex. *Eucosma metzneriana* Treits. yielded a second British specimen to Dr. J. R. Langmaid in Southsea — a long step from the first in Cambridgeshire. *Cydia pactolana* Zell. has been found by T. G. Winter to have extended its range into Surrey and Berkshire and is probably even more widespread but overlooked.

Very rare or rediscovered species include *Pammene agnotana* Rebel of which the second British specimen was taken by R. Fairclough. A. M. Emmet found the very local *Phyllonorycter saporitella* Dup. to be locally common in East Anglia. *Tebenna bjerkan-drella* Thunb., a very little-known species was found in south-west England by R. J. Heckford who bred the species, and also in South Ireland by K. G. M. Bond. Other long-lost species found were *Epermenia insecurella* Stt., *Coleophora ochrea* Haw. and *Pyrallis lienigialis*, all of which are an encouragement when so many habitats seem threatened.

New understanding of life histories is at least as important as the discovery of adults and can lead to a better understanding of a species' distribution. Such a case is *Depressaria ultimella* Stt. which R. J. Heckford found on *Apium nodiflorum*; other interesting new information was found by A. M. Emmet about *Crombrugghia distans* Zell., and it seems *Platyptilia calodactyla* D. & S. may have a foodplant other than *Solidago virgaurea*.

Palpita unionalis Hb. was probably the most widely recorded migrant 'micro' in 1982 but there was also a record of *Phthorimaea operculella* Zell. by E. C. Pelham-Clinton at Dungeness, and from Wiltshire G. Smith recorded *Euchromius ocella* Haw. T. Peet's record of *Agrotera nemoralis* Scop. in Guernsey seems to place that species among the migrants and raises questions about its status in south-east England, where perhaps it is only a temporary resident, depending largely on migration.

Within the country the most noticeable movement is that of *Crociosema plebejana* Zell. which has spread from the south-west, turning up not only in Hampshire but in Kent and Essex. *Ectoedemia turbidella* Zell. is found to have moved in the opposite direction, and *Bucculatrix cidarella* Zell.'s habit of feeding on *Myrica* has been found to occur even in England!

The systematic list now follows. Most of the records given are new county (or vice-county) records. References are included

wherever possible and the source of the record is given by the initials of those whose names follow and to whom I am very grateful for their help and collaboration. It has not always been easy to decide which records to include, but to cover any imprudent omissions I have prepared a duplicated list of all the records submitted which is available to contributors and others interested who send a S.A.E.; numbers of vice-counties are given in parentheses. Year: 1982 unless stated otherwise.

Contributors: H. E. Beaumont, K. P. Bland, J. M. Chalmers-Hunt, H. E. Chipperfield, M. F. V. Corley, A. M. Emmet, R. J. Fairclough, J. L. Fenn, M. W. Harper, N. F. Heal, R. J. Heckford, J. R. Langmaid, H. N. Michaelis, E. C. Pelham-Clinton, J. Roche, A. N. B. Simpson, F. H. N. Smith, P. A. Sokoloff, D. H. (& P. H.) Sterling, M. J. Sterling, R. G. Warren, E. H. Wild & M. R. Young.

MICROPTERIGIDAE

Micropterix tunbergella Fab. Blairgowrie (89) '81 — KPB,
Ent. Rec. 94: 219

NEPTICULIDAE

Bohemannia quadrimaculella Boh. Loch Kindar (73) — MRY,
new to Scotland

Etainia decentella H.-S. Notts. (56) '81 — MJS

Ectoedemia argyropeza Zell. Inverpolly (105) — MRY, most
northerly record.

E. turbidella Zell. Faringdon (22) — MFVC

Trifurcula griseella Wolff Beer (3) 13-iv — RJH

T. cryptella Stt. Worcs. (37) bred — ANBS

Stigmella filipendulae Wocke Brixham (3) vacated mines —
RJH

S. samiatella Zell. N. E. Essex (19) becoming well
established — AME

S. acetosae Stt. Dalbeattie (73) '81 — KPB,
Ent. Rec. 94: 219, new to
Scotland.

INCURVARIIDAE

Lampronia fuscata Tengst. Romford (18) — N. Nash per
AME

Adela croesella Scop. Caerlaverock (72) '81 — KPB,
Ent. Rec. 94: 219

PSYCHIDAE

Solenobia inconspicua Stt. Queen's Wood (36) — MWH

Diplodoma herminata Geoff. Perth. (88) larvae — KPB

Luffia lapidella Goeze Marazion (1) '81 & '82 — FHNS,
Ent. Rec. 95: 53 — 57

TINEIDAE

Triaxomera fulvimitrella Sodof. Harewood Forest (12) — DHS;
Powerscourt (H20) — JMC-H,

- Tinea columbariella* Wocke *Ir. Nat. J.* **20**: 532
 Witham and Wickham Bishops
 (19) '50 — *E.M.M.* **87**: 171
 Rainham (18) '81 — G. S.
 Robinson, *Ent. Gaz.* **33**: 51;
 Grays (18) '81 & '82 — DJLA

LYONETIIDAE

- Bucculatrix cristatella* Zell. Scotland (82, 83 & 85) —
 KPB
B. cidarella Zell. Larva on *Myrica* in England
 (9) — AME, *Ent. Rec.* **94**:
 238
B. thoracella Thunb. S. Hants (11) — DHS & JRL,
Ent. Rec. **89**: 315 & **94**: 206

GRACILLARIIDAE

- Caloptilia robustella* Jäckh New to Ireland (H1) JMC-H,
Ir. Nat. J. **20**: 532
Parectopa ononidis Zell. S. Essex (18) locally common
 from Purfleet to Foulness —
 AME
Phyllonorycter roboris Zell. Surrey (17) — NFH & RJF,
Ent. Rec. **95**: 72
P. saportella Dup. Norfolk (27 & 28) & Suffolk
 (25) — AME, *Ent. Rec.* **94**:
 119, 244.

CHOREUTIDAE

- Tebenna bjerkanndrella* Thunb. Douglas (H4) — K. G. M. Bond,
Ent. Rec. **95**: 28; bred Devon
 etc. — RJH, Publication awaited.
Choreutis sehestediana Fabr. Danbury (18) '81 — AME;
 Plympton (3) — RJH; Coll (103)
 larvae on *Scutellaria minor*, —
 KPB, *Ent. Rec.* **94**: 219

GLYPHIPTERIGIDAE

- Glyphipterix minorella* Snell. Edinburgh (83) 4.ix. — KPB

YPONOMEUTIDAE

- Argyresthia trifasciata* Staud. Hampstead (21) June — R. A.
 Softly (AME), *Ent. Rec.* **94**:
 180 - 182
Yponomeuta rorrella Hb. Ham Street (15) — NFH;
 Faringdon (22) — MFVC
Swammerdamia compunctella H.-S. Hough Wood '79 & Queen's
 Wood (36) '81/2 — MWH;
 Scarborough (62) — HEB; New
 Forest (11) '71 — DJLA
Ypsolophus dentella Fabr. Larvae on *Symphoricarpus rivula*-

- Plutella haasi* Staud. *ris* at Saltfleetby-Theddlethorpe (54) – HEB
Beinn Eighe (105) 11.vii. '54, G.A.K. Hervey, det. J. Kyrki '82, new to Britain, Kyrki & Jalava, *Ent. Gaz.* 34: 61
- EPERMENIIDAE**
Phaulernis fulviguttella Zell. Breney Common (2) – FHNS
Epermenia insecurella Stt. S. E. England – S. Palmer per MRY
E. aequidentellus Hofm. Stodmarsh (15) – JMC-H, *Ent. Rec.* 94: 202
- COLEOPHORIDAE**
Goniodoma limoniella Stt. Saltfleetby-Theddlethorpe (54) – HEB, most northerly record.
Coleophora sp. Bred from *Suaeda* (Kent) – NFH, identity and publication awaited.
C. coracipennella Hb. Worcs. (37) – ANBS; S. Yorks (63) '81/82 – HEB, *Ent. Rec.* 94: 108, most northerly record.
C. cerasivorella Pack. S. Yorks (63) larva on *Prunus spinosa* – HEB, most northerly record.
C. limosipennella Dup. Sprotbrough (63) '81/82 – HEB, *Ent. Rec.* 94: 190
C. fuscocuprella H.-S. Worcs. (37) – ANBS
C. viminetella Zell. Larva on *Filipendula ulmaria* – FHNS Warwicks. (38) – ANBS
C. binderella Koll. Larva on *Carpinus* – NFH, *Ent. Rec.*, 94: 129
C. albitarsella Zell. Aberdour (85) bred – KPB, new to Scotland.
C. frischella Linn. Grays (18) – DJLA; Saffron Walden (19) – AME
C. hemerobiella Scop. Worcs. (37) – ANBS
C. lithargyrinella Zell. Hartside (81) bred – KPB, new to Scotland
C. ochrea Haw. Rediscovered in Kent – NFH
C. currucipennella Zell. Hilton (57) – MJS
C. trochilella Dup. Larvae on *Artemisia absinthium* – MJS
C. machinella Brad. A further Surrey (17) record – RJF
C. ramosella Zell. Whitstable (15) bred – NFH, new to U.K., *Ent. Rec.* 95: 84
C. benanderi Kanerva Grays (18) – DJLA

ELACHISTIDAE

Elachista alpinella Stt.*E. littorcola* Le Marchand*E. subalbidella* Schlag.*Cosmiotes stabilella* Stt.

Worcs. (37) — ANBS

Keyhaven (11) 4.vi. — EHW,
new to Britain, *Ent. Rec.*, **95**:
65

Alford (54) 6.vi. — HEB

Axmouth & Beer (3) bred —
RJH

OECOPHORIDAE

Bisigna procerella D. & S.*Batia lunaris* Haw.*Depressaria ultimella* Stt.Ham Street (15) — JMC-H etc.,
Ent. Rec. **94**: 204

Notts. (56) '81 — MJS

Larvae on *Apium* — RJH
then others, various localities,
publication awaited.*D. badiella* Hb.

Notts. (56) — MJS

D. douglasella Stt.

Worcs. (37) — ANBS

D. weirella Stt.Herefs. (36) — MWH; Long
Eaton (57) — MJS*Agonopterix* sp.Cornwall, bred — JRL & ECP-C,
identity and publication awaited.*A. astrantiae* Hein.East Meon (11) — DHS & JRL,
Ent. Rec. **94**: 182

ETHMIIDAE

Ethmia funerella Fabr.Gt. Sampford (19) 19.v. — N.
Nash per AME; Clough Wood
(57) — MJS

GELECHIIDAE

Metzneria aprilella H.-S.Freckenham (26) bred — ANBS;
Faringdon (22) — MFVC; S.
Yorks (63) — HEB*M. lappella* Linn.Derbys (57) — MJS; Cresswell
(67) — HEB*M. aestivella* Zell.

Purfleet (18) — DJLA

Paltodora cytisella Curt.

Edwinstowe (56) — MJS

Monochroa suffusella Dougl;

Worcs. (37) — ANBS

M. lutulentella Zell.Matching (19) — AJF; Axminster
(3) 13.vii. — ECP-C*Recurvaria nanella* D. & S.

Worcs. (37) — ANBS

Teleiodes vulgella Hb.Larvae on *Juniperus* — PAS*T. decorella* Haw.Great Horkesley (19) — B. H.
Harley per AME*Chionodes fumatella* Dougl.Fingringhoe (19) previously mis-
identified as *B. similis* '72 —
AME; Faringdon (22) — MFVC;
Barton Mills (26) — AME &

- Scrobipalpa clintoni* Pov. ECP-C; Long Eaton (57) — MJS; Woodthorpe (54) — HEB. It seems Meyrick's distribution as 'coastal' is misleading.
- Phthorimaea operculella* Zell. Jura (102) bred — MRY
New Romney (15) 10.ix. — ECP-C
- Caryocolum blandulella* Tutt Sandwich (15) from larva on *Cerastium semidecandrum*, not previously reared in Britain — DJLA
- Nothris congressariella* Bruand Herm (113) bred — DJLA, *Ent. Rec.*, **95**: 37
- Syncopacma larseniella* Gozm. Woodthorpe (54) 3.viii. — HEB; Life history notes — RJH, *Ent. Rec.* **94**: 134
- S. sangiella* Stt. Cramond Island (83) bred — KPB; Notts. (56) — MJS; Sproughtbrough (63) — HEB
- Oegoconia quadripuncta* Haw. Faringdon (22) — MFVC
- MOMPHIDAE**
- Mompha terminella* H. & W. Worcs. (37) — ANBS; Leckford (12) — DHS
- M. miscella* D. & S. Beer (3) — RJH
- M. conturbatella* Hb. Grays (18) 7.vii.81 — DJLA
- M. nodicolella* Fuchs. Worcs. (37) — ANBS; Deneby Ings (63) — HEB
- COCHYLIDAE**
- Hysterosia sodaliana* Haw. Heydon (19) larvae 11.vii. — AME; Faringdon (22) — MFVC
- Phalonidia alismiana* Rag. Attenborough (56) & Hilton (57) — MJS
- Cochylis flaviciliana* Westw. Worcs. (37) — ANBS
- TORTRICIDAE**
- Cacoecimorpha pronubana* Hb. Larvae on conifers — T. G. Winter, *Ent. Gaz.* **33**: 229-230
- Aphelia viburnana* D. & S. Larvae on *Genista tinctoria* — FHNS
- Acleris sparsana* D. & S. Larvae on *Acer campestre* — MFVC
- A. abietana* Hb. Reared from *Abies grandis* — MRY
- A. literana* Linn. Hockwold (28) — JLF; Faringdon (22) — MFVC; Handsworth (39) — RGW
- Apotomis sororculana* Zett. Derbys. (57) — MJS

- Lobesia reliquana* Hb. Copperas Wood (19) '81 — AME
- L. littoralis* H. & W. Larvae on *Lotus corniculatus* (45) — JRL
- Ancylis geminana* Don. Alford (54) 20.vi. — HEB
- Crociosema plebejana* Zell. Highcliffe (11) three, xi. — EHW; Newington (15) 9.ix. — P. J. Jewess; Grays (18) 18.x. — DJLA
- Griselda myrtillana* H. & W. Mynydd Prescelly (45) several 30.v. — ECP-C
- Eucosma metzneriana* Treits. Southsea (11) 21.vi. — JRL, *Ent. Rec.* 94: 202
- E. pauperana* Dup. Hockwold (28) bred — JLF
- E. pupillana* Cl. Edwinstowe (56) & Long Eaton (57) — MJS
- Thiodia citrana* Hb. Llandudno (49) 10.viii. — HNM
- Clavigesta purdeyi* Durr. Notts. (56) '81 — MJS
- Blastesthia posticana* Zett. Faringdon (22) — MFVC
- Pammene agnotana* Rebel Fleam Dyke (29) 25.iv. — RJF, *Ent. Rec.* 95: 83
- P. aurantiana* Staud. Matching (19) — AJF
- P. trauniana* D. & S. Faringdon (22) '77 & '82 — MFVC
- Cydia caecana* Schlag. Faringdon (22) '79 — MFVC
- C. compositella* Fabr. Staffs. localities (39) '81/82 — RGW
- C. pallifrontana* L. & Z. Hadstock (19) 29.vi. — AME; Worcs. (37) — ANBS; Herefs. (36) — MWH
- C. orobana* Treits. Stoke Ferry (28) — JLF; Saltfleetby-Theddlethorpe (54) 3.viii. — HEB
- C. pactolana* Zell. Windsor Forest (17 & 22) — T. G. Winter, *Ent. Gaz.* 33: 212
- Dicrorampha alpinana* Treits. Edinburgh (83) — KP
- D. consortana* Steph. Traeth-y-Mwnt (46) larvae — ECP-C
- PYRALIDAE**
- Euchromius ocella* Haw. Trowbridge (8) 7.x. — G. Smith, *Ent. Rec.* 95: 33
- Crambus uliginosellus* Zell. Loch Log (96) amongst *Carex* — RWJU
- Agriphila latistria* Haw. Notts. (56) '81 — MJS
- Pediasia aridella* Thunb. Needs Ore (11) — DHS
- Eudonia vandaliella* H.-S. Faringdon (22) — MFVC

<i>Microstega hyalinalis</i> Hb.	Grays (18) — DJLA
<i>Udea decrepitalis</i> H.-S.	Talybont on Usk (42) 6.vi.78 — P. J. Jewess <i>Ent. Rec.</i> 94: 121
<i>Agrotera nemoralis</i> Scop.	Guernsey (113) — T.N.D. Peet, <i>Ent. Rec.</i> 95: 37
<i>Orthopygia glaucinalis</i> Linn.	breed from pupal detritus (16) — PAS
<i>Pyrallis lienigialis</i> Zell.	nr. Faringdon (22) three — MFVC
<i>Aphomia sociella</i> Linn.	bred from litter in an outbuilding, unconnected with bees' or wasps' nests — PAS
<i>Dioryctria schuetzeella</i> Fuchs	Rye (14) — M. W. F. Tweedie, <i>Ent. Rec.</i> 94: 220; Ham Street (15) — various recorders
<i>Alispa angustella</i> Hb.	Grays (18) — DJLA; Dartford (16) 5.x. believed to be a partial third brood — PAS
<i>Zophodia convolutella</i> D. & S.	nr. Whitstable (15) 30.iv. new to Britain. — JR, publication awaited.
PTEROPHORIDAE	
<i>Crombrugghia distans</i> Zell.	Discovery of larva — AME, <i>Ent. Rec.</i> 95: 15-18
<i>Platyptilia calodactyla</i> D. & S.	Bradwell-on-Sea (18) — A. J. Dewick
<i>Stenoptilia saxifragae</i> Fletch.	Holloway (57) — MJS
<i>Leioptylus lienigianus</i> Zell.	Long Eaton (57) — MJS
<i>L. carphodactyla</i> Hb.	Walton-in-Gordano (6) — ECP-C & JRL
<i>L. tephrodactyla</i> Hb.	Luxulyan '79 & Ladock Woods (2) — FHNS

CHLOROPHORUS PILOSUS FORST. VAR. GLABROMACULATUS GZE. (COL.: CERAMBYCIDAE) FROM AN IMPORTED CHEESE BOARD. — During the summer of 1981, two friends presented me with an example of the above named species. It had been found dead in its emergence hole in an imported softwood cheeseboard (country of manufacture ? Italy) which had been bought some while earlier in Manningtree, Essex. Powdery sawdust had been noticed in the larder housing the board for some time, but my friends had not identified its source. Unfortunately, fearing infestation of other timber in their cottage, they burnt the board immediately upon discovery of the beetle. The species breeds in dry, deciduous timber and is not uncommon in middle Europe. — D. R. NASH, 266 Colchester Road, Lawford, Essex. C011 2BU.

THE FEMALE OF *AGRODIAETUS IPHIGENIA*
NONACRIENSIS BROWN

By JOHN G. COUTSIS*

When the first two male butterflies of this species were discovered in Greece, they were provisionally identified as *Agrodiaetus damone* Eversmann. (Brown & de Worms, 1975).

Later on, and with the aid of more material, Brown described these butterflies as subspecies *nonacriensis* of *Agrodiaetus iphigenia* Herrich-Schaeffer (Brown, 1977) and included in his description, what he believed, with reservations, to have been the female of this species. He refrained, however, from establishing it as an Allotype.

After six years of painstaking search, a single female of *nonacriensis* was eventually taken by the author on 13th July 1982, at 1600 metres, on a mountain of N. Peloponnissos, Greece.

The superficial characters of this specimen suggest that Brown's questionable female is, within all probability, *Agrodiaetus pelopi* Brown.

The single female of *nonacriensis* may be described as follows (Figs. 1 & 4):

FW length 14mm. Upperside ground colour uniformly dark chocolate-brown. FW with clear white Costa and inconspicuous black discoidal Stria; fringes brown along their proximal half, pure white along their distal half from the Apex to about S6 and whitish from S6 to Sla. Fringes on HW as on FW, but proximal half chequered with dark brown; outer half whitish throughout. Underside ground colour light brown with marked greyish tinge; both wings with light brown fringes and a fine dark brown marginal line; FW with conspicuous, but fuzzy, submarginal black markings and traces of orange-brown lunules, especially in Sla to S4, also present a few traces of antemarginal black spots; post-discal black markings and black discoidal stria as in male. HW with prominent white stripe along V4 and vestigial submarginal markings and orange-brown lunules; post-discal black markings and discoidal black stria, as in male.

The genitalia (Figs. 1a & 4a) are as follows: Eversible Tube entirely diaphanous, with rounded distal end; Ostium Bursae with

LEGEND

Females of:

Agrodiaetus iphigenia nonacriensis Brown: Fig. 1. Upperside; Fig. 4. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1982. *Agrodiaetus pelopi* Brown: Fig. 2. Upperside; Fig. 5. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1978. *Agrodiaetus aroaniensis* Brown: Fig. 3. Upperside; Fig. 6. Underside. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1981.

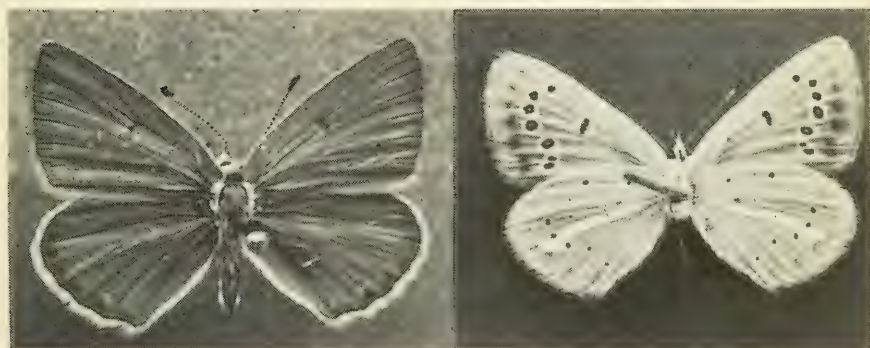
*4 Glykonos Street, Athens 139, Greece.



1

2

1cm



3

4

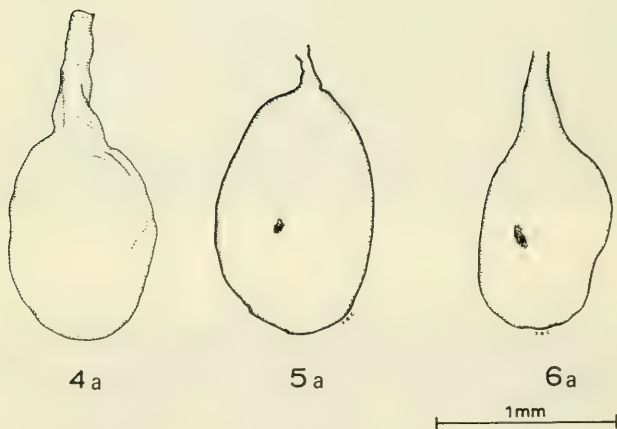
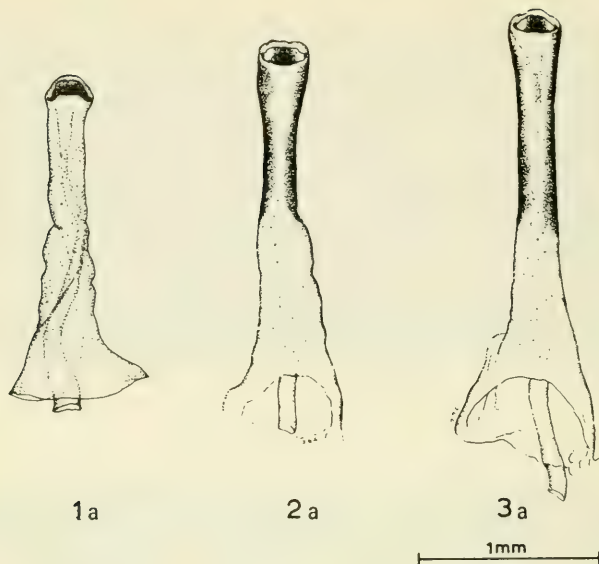
1cm



5

6

1cm



Dorsal view of Eversible Tube of female genitalia of *Agrodiaetus*: Fig. 1a. *A. iphigenia nonacriensis* Brown. Mountains of N. Peloponnissos, Greece, 1600m, 13.vii.1982. Fig. 2a. *A. pelopi* Brown. Mountains of N. Peloponnissos, Greece, 800m, 7.vii.1973. Fig. 3a *A. aroaniensis* Brown. Mountains of N. Peloponnissos, Greece, 1400m, 24.vii.1971.

Corpus Bursae of female genitalia of *Agrodiaetus*: Fig. 4a. *A. iphigenia nonacriensis* Brown. Data as in fig. 1a. Fig. 5a. *A. pelopi* Brown. Data as in fig. 2a. Fig. 6a. *A. aroaniensis* Brown. Data as in fig. 3a.

THE FEMALE OF *AGRODIAETUS IPHIGENIA NONACRIENSIS* BROWN
sclerotised plate, which is oblong, with down-turned ends; Corpus
Bursae without Signa.

Agrodiaetus iphigenia nonacriensis is sympatric and synchronic
with *Agrodiaetus pelopi* Brown and *Agrodiaetus aroaniensis* Brown,
both of which have females that somewhat resemble that of *nona-*
criensis.

The female of *nonacriensis* differs from those of *pelopi* (Figs.
2 & 5) and *aroaniensis* (Figs. 3 & 6) by: (a) The darker ground
colour upperside. (b) The pure white FW costa upperside. (In
pelopi and *aroaniensis* it is light beige). (c) The whitish outer half
of fringes upperside. (In *pelopi* and *aroaniensis* it is light beige on
HW and light brown of FW). (d) The marked grey tinge of ground
colour underside, which is absent in both *pelopi* and *aroaniensis*.

It differs from that of *pelopi* by: The uniform ground colour
upperside, which in *pelopi* is disrupted by the darker veins.

It differs from that of *aroaniensis* by: The presence of a
prominent white stripe on HW underside, which is either absent
or vestigial in *aroaniensis*.

The genitalia differ from those of *pelopi* (Figs 2a & 5a) and
aroaniensis (Figs 3a & 6a) by: (a) The entirely diaphanous Ever-
sible Tube. (In *pelopi* and *aroaniensis* it is sclerotised along its
distal half). (b) The shape of the sclerotised plate at the Ostium
Bursae. (Oblong with down-turned ends in *nonacriensis*, oblong
with straight ends in *pelopi* and *aroaniensis*). (c) The fact that the
Corpus Bursae lacks Signa. (These are present in *pelopi* and *aro-*
niensis).

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mann) (Lep., *Lycaenidae*) discovered in the Peloponnese.
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Lycaenidae (Lepidoptera) from Greece. *Entomologische Beri-*
chten, Deel 36: 46-47
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Taxa of the Genera *Agrodiaetus* Huebner, 1822 and *Polyom-*
matus Kluk, 1801 (Lep., *Lycaenidae*). *Entomologist's Gazette*,
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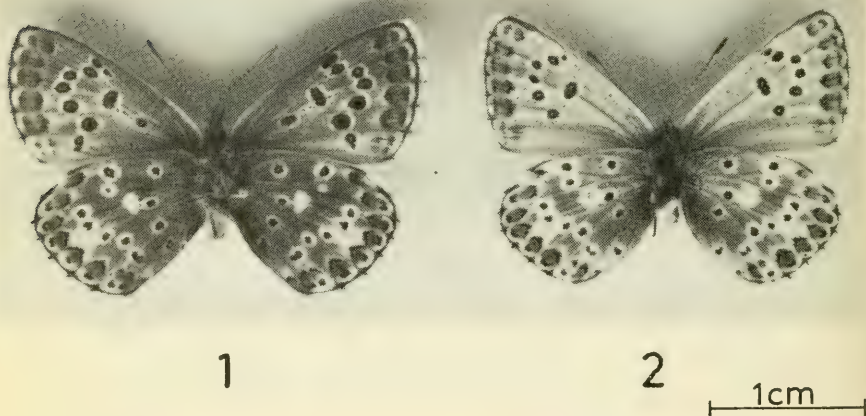
ORTHOSIA MINIOSA D. & S.: BLOSSOM UNDERWING AND O.
OPIMA HBN.: NORTHERN DRAB IN WARWICKSHIRE. — Despite
the cold spring, on the 8th May 1983 a male *O. miniosa* D. & S.
appeared here at m.v., and on the 10th May, *O. opima* Hbn. These
are the first records for these two species for Charlecote in the
16 years of the light trap being run here. — A. F. J. GARDNER,
Willows End, 29 Charlecote, Nr. Warwick.

NOTES ON *ULTRAARICIA ANTEROS* FREYER
(LEP.: LYCAENIDAE) FROM GREECE

By JOHN G. COUTSIS*

In the *Field Guide to the Butterflies of Britain and Europe* (Higgins & Riley, 1980) it is mentioned that *Ultraaricia anteros* flies in June/early July in a single brood.

In Greece, I have collected fresh specimens of this species from as early as 7th May to as late as 29th September. The time lapse between these two captures suggests that *anteros* is at least double brooded; a view also shared by other authors.

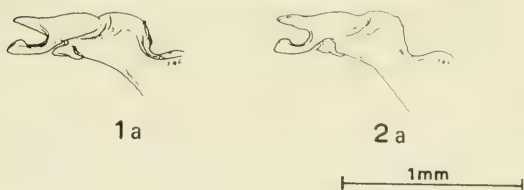


Ultraaricia anteros Freyer, male undersides: Fig. 1. Mt. Parnassos, Greece, 2000m, 18.iv.1967. Fig. 2. Mt. Parnassos, Greece, 2000m, 3.vii.1965.

In a recent revisional article of *Ultraaricia* Beuret (Nekrutenko, 1980) a new species of *Ultraaricia* is described from Mts Alibotusch and Pirin, in Bulgaria, under the name of *orpheus*. Amongst the diagnostic characters listed are the morphology of the male genitalia and the presence of a black discal spot on FW underside. In fact, this latter character is also used in a key to the identification of the males of all *Ultraaricia* species recognised by Nekrutenko.

In Greece they fly in sympatry both individuals that possess and that lack the black discal spot on FW underside (Figs. 1 & 2). The genitalia of these two morphs are identical with each

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Ultraaricia anteros Freyer, side view of Labides, Falces and Tegumen of male genitalia: Fig. 1a Mt. Parnassos, Greece, 2000m, 18.vi.1967. Fig. 2a. Mt. Parnassos, Greece, 2000m, 3.vii.1965.

other (Figs. 1a & 2a) and it is reasonable to assume that they are conspecific.

In view of this, it is doubted that the presence of a black discal spot on FW underside in *orpheus*, constitutes a valid diagnostic character for differentiating it from *anteros*.

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AUTUMNAL AGGREGATION OF *COCCINELLA UNDECIMPUNCTATA* L. (COL.: COCCINELLIDAE) IN BRITAIN. — In their detailed study of the ecology of *Coccinella undecimpunctata* L. (1970, *Entomologist* **103**: 153-170) Benham & Muggleton stated (loc. cit. p. 157) that winter aggregation of this species had never been reported from the British Isles.

Whilst collecting by the estuary of the River Stour near Harkstead, East Suffolk (TM 1833) on October 25th, 1976, I came across an old, mature, uprooted oak stump which had been washed into the saltmarsh and left stranded — presumably after an extremely high tide. It was now thoroughly desiccated and the bark was at the very loose stage i.e. when it can easily be removed by hand in large, curved 'slabs'. Removing the bark revealed hundreds of *C. undecimpunctata* bunched tightly together, and I was able to pick out one or two interesting varieties. Moving on a little, I encountered many smaller but, nonetheless, noteworthy concentrations (ca. 20-50 individuals) behind slabs of loose sandstone in the remains of the cliffs at Harkstead. From their choice of microhabitat, large numbers and semi-comatose state, there can be little doubt that these aggregations represented beetles which had almost certainly gathered to overwinter together. — D. R. NASH, 266 Colchester Road, Lawford, Essex. C011 2BU.

BUTTERFLIES AND HAWKMOTHS OF KUWAIT

By W. AL-HOUTY*

The State of Kuwait extends between latitude 28°30' and 30°05' N and longitude 46°33' and 48°30' E, and occupies an area of approximately 1800 sq. km. in the northeastern part of the Arabian peninsula. Besides the mainland, Kuwait includes a number of off-shore islands of which only the island of Failakka is inhabited.

The climate is typically arid with temperature ranging from -3°C. to 49°C, and an average rainfall of 118 mm. The topography consists of desert landscape characterised by elevations, wadis (drainage lines), depressions, sand dunes and salt marshes. The vegetation which is poor open scrub of undershrubs, perennial herbs and ephemerals, is controlled primarily by rainfall.

There are published lists of lepidoptera for neighbouring countries, by Larsen (1977), Pittaway (1979a, 1979b) and Wiltshire (1964, 1980), and for Kuwait by Brown (1970).

Excepting those lepidoptera recorded by Mr. J. N. Brown and specified as such, all others stated hereunder as having been captured in the State of Kuwait, were taken by me and are in my collection in the Department of Zoology, Kuwait University.

Lycaenidae

Tarucus balkanicus Freyer: Little Tiger Blue. Rika, in the southern part of Kuwait City, one 1.x.1980.

T. rosaceus Austaut: Mediterranean Tiger Blue. Kuwait City, 4.v.1980, 20.x.1980, 15.xi.1982; Wafra, six v.1980, imbibing at *Zizyphus*; Jahra, one 3.iv.1980; Rika, one 28.ix.1980.

Zizeeria karsandra Moore: Small Mauve Blue. Kuwait City, one iv.1980; Wafra, one 13.iv.1982; Failakka Island, two 15.iv.1982.

Lampides boeticus L.: Rika, one 5.xi.1980; Wafra, five 13.iv.1982.

Chilodes galba Lederer: Desert Small Blue. Kuwait State (Brown, 1970).

Cupido minimus Fuessly: Little Blue. Kuwait State (Brown, 1970).

Pieridae

Colias crocea Geof.: Clouded Yellow. Abundant in Kuwait City, in Khaldiyyah, Al-Rabiyah and in Sulaibikhat. Specimens were taken Sulaibikhat, 3.xi.1980; Kuwait City, 23.xi.1980, 20.x.1980; Wafra, 13.iv.1982.

Colotis fausta Olivier: Salmon Arab. Kuwait City, one 10.xi.1980, flying in cultivated fields.

Anaphaeis aurota Fab.: Capper White. Salmy, one 30.x.1980.

Pieris rapae L.: Small White. Kuwait City. Larvae on cauliflower, ii-v.

*Department of Zoology, University of Kuwait.

P. brassicae L.: Large White. Kuwait City.

P. napi L.: Green-veined White. Kuwait State (Brown, 1970).

Euchloe belemia Esper: Green-striped White. Kuwait City, one iii.1980.

Pontia glauconome Klug.: Desert White. Kuwait City, one early iii.1981, imbibing at *Crucifer* sp.

Papilionidae

Papilio demoleus L.: Swallow Tails. Ahmadi, one specimen only, c. 1978.

Danaidae

Danaus chrysippus L.: Plain Tiger. Abdelli, one 8.iv.1982.

Nymphalidae

Cynthia cardui L.: Painted Lady. Migrant, widespread over State from Abdelli in the north across the centre to Mushriff and Audaillyah down to Wafra in the south. Specimens taken, Wafra 10.iv.1980, 13.iv.1982; Sulaibikhat, 4.v.1980; Kuwait City, 3.xii.1980; Fintas, 12.ii.1980; Mina abdullah, 18.ii.1980.

Vanessa atalanta L.: Red Admiral. Ahmadi (Brown, 1970).

Junonia orithya L.: Pansy Blue. Kuwait State (Brown, 1970).

Hesperiidae

Spialia phlomidis H.-S.: Persian Skipper. Ahmadi (Brown, 1970).

Sphingidae

Hyles lineata livornica Esp.: Striped Hawk. Occurs in the central area as at Sulaibikhat and Mushriff, also along the western border and at Al-Salmi. Specimens taken Sulaibikhat, three 10.ii.1980; Salmy, one 27.ii.1980; Kuwait City, 12.ii.1980, 28.iv.1981.

Macroglossum stellatarum L.: Humming-bird Hawk. Kuwait City, 5.x.1980, 6.ix.1980, 5.ix.1982. I have no record of it being seen elsewhere in the State.

Daphnis nerii L.: Oleander Hawk. Kuwait City, one 1981. Sulaibikhat, four larvae on *Nerium oleander*.

Acherontia atropos L.: Death's Head. Kuwait City, a larva on *Clerodendron inerme*: False Jasmine in the British Embassy garden at Shaab, 20.xi.1981, imago bred.

Hippotion celerio L.: Silver-striper Hawk. Common in east Kuwait.

Acknowledgments

This is part of a survey done while holding a grant from the

research council in the University of Kuwait. I also gratefully acknowledge Mr. A. R. Pittaway for help in identifying the lepidoptera mentioned in this paper.

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THE NAME "APRILINA". — The Romans neglected to make use of a separate adjective meaning "of April", but Linnaeus was following grammatical rules in inventing the feminine form Aprilina for his purpose.

I had not given the matter much critical thought before but it had always appeared to me that the poetic suggestion of "spring-like green" lay behind the term. Does anyone feel inclined to agree? I am not happy over the modification of the compound "a-philos" to take a diminutive, as suggested, however. — J. K. C. KEMP, Westlow Cottage, Bates Lane, Souldern, Bicester, Oxon, OX6 9JU.

NOCTUID LARVA AT SUGAR. — Whilst operating a m.v. lamp in a Bedfordshire birch wood on the last and typically cold night of April this year and hoping for a visit from *Odontosia carmelita* Esper (Scarce Prominent), I decided to try some half-hearted sugaring. No moths came to the sugar but a one inch long noctuid larva. This larva with the adult palate was subsequently identified as that of *Polia nebulosa* Hufnagel (Grey Arches). A single *O. carmelita* turned up that night, making the site apparently the third recorded Bedfordshire locality for this species. — K. F. WEBB, 2 Kingsdown Avenue, Luton, Beds LU2 7BU, 16.v.83.

LEDRA AURITA L. (HEM.: LEDRIDAE) CONFIRMED FROM WILTSHIRE. — In 1975, the late C. H. Andrewes published a note recording the Pipunculid *Nephrocerus flavicornis* Zett. from Grovely Wood, near Salisbury, Wilts. (1975, *Entomologist's mon. Mag.* 110 (1974) : 231). He stated that he had not seen its reputed Cicadellid host, the very distinctive *Ledra aurita* L., in that locality or elsewhere in the county.

In over ten years collecting in Wiltshire, I have only met with a single specimen of *Ledra*. Interestingly, in view of Andrewes' comments, it was taken on a live beech trunk in the Chilfinch area of Grovely Wood (SU 0433) on August 4th, 1978. — D. R. NASH, 266 Colchester Road, Lawford, Essex. CO11 2BU.

NOTES CONCERNING THE HABITAT OF, AND OTHER
COLEOPTERA ASSOCIATED WITH, AN EXAMPLE OF
AGONUM GRACILIPES (DUFT.) (COL.:
CARABIDAE) TOGETHER WITH A REAPPRAISAL
OF ITS BRITISH STATUS

By DAVID R. NASH*

In a recent note (Nash, 1982) I briefly reported the capture of an example of the very rare *Agonum gracilipes* (Duft.) in dry gravel workings near Ipswich, Suffolk. As there is (a) an almost total absence of ecological data concerning this species and (b) widespread recognition of the importance of substrate and associated vegetation as major determinants of the presence or absence of particular Carabids in a macrohabitat, it would seem important to detail the other Carabids taken at the same time from the locality. It should not be forgotten, however, that the specimen may not have developed at the site in question, thus rendering such information spurious. Species recorded — chiefly from under stones — were as follows: *Leistus ferrugineus* (L.), *Trechus obtusus* Er., *Olisthopus rotundatus* (Pk.), *Amara aenea* (Deg.), *A. aulica* (Pz.), *A. bifrons* (Gy.), *A. tibialis* (Pk.), *Harpalus schaubergerianus* Puel, *H. affinis* (Sch.), *H. anxius* (Duft), *H. rubripes* (Duft.), *H. rufitarsis* (Duft.), *H. smaragdinus* (Duft.), *Bradycellus harpalinus* (Ser.), *Microlestes maurus* (St.), *Metabletus foveatus* (Fourcroy). Several examples of the bug *Odontoscelis dorsalis* (F.) were also found.

Mr. A. A. Allen has recently deleted *A. gracilipes* from the Irish list and questioned the authenticity of the records from Cambridgeshire and Yorkshire (Allen, 1977). There are recent records of a single specimen at M. V. light in Sussex (Hodge, 1978), and of one flying at Ailsa Craig (Crowson, 1980). Apart from the two aforementioned specimens, the few remaining records are of singletons from the Suffolk and Norfolk coast — for details see Allen (*loc. cit.*) and Morley (1898).

East Anglian coastal localities have probably attracted more attention over the last century and a half than almost any other stretch of the British coastline. It does, therefore, seem most surprising that, despite all this activity over such a lengthy period of time, only a handful of single specimens of *gracilipes* have been found, the majority of captures having been made before the turn of the century.

Agonum gracilipes seems to have always been afforded full residential status on the British list. If a species is truly resident then, theoretically, it should be possible, particularly in the case of

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a relatively large Carabid, to collect examples at, or close to, a previously-known site of capture. It is, of course, well-known that some species of insects appear to maintain their populations at an unusually low level of density. In such cases, the species is often only captured sporadically in its known habitats, usually as odd specimens, but occasionally in numbers after a rare population explosion. The published data, however, seem to refute the possibility of *gracilipes* belonging to this latter group of species, and the late Carl Lindroth has suggested (Lindroth, 1974) that our specimens were 'probably stragglers' (*op. cit.* p.83) — a view with which I concur.

In the light of the published evidence, it might perhaps be more appropriate to asterisk *gracilipes* in our 'Checklist' (Kloet and Hincks, 1977) although the beetle does not fulfil, in full, the criterion for that symbol (*op. cit.* page v), in that it is not 'of fairly regular occurrence'.

Acknowledgements

I thank Mr. A. A. Allen for confirming my determination of the specimen of *Agonum gracilipes* and also a specimen of *Odon-toscelis dorsalis* taken from the same habitat.

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[Mr. Nash's thesis concerning the British status of *A. gracilipes* is eminently reasonable, and I would support it. The fact is that no one has really made a serious attempt as yet to identify the

probable non-resident immigrants in our beetle fauna, and the cautious and perhaps sometimes over-sparing use of the asterisk indicating these in the 'Check List' may be justified by the lack of hard evidence in most cases. The concentration of such a high proportion of the few captures of *gracilipes* in such a short stretch of the Suffolk coast is striking and curious. Do the beetles come from the Dutch and Belgian coastal area? Assuming they do occasionally fly across, what keeps most of them to such a narrow flight-path? Or do they reach us by what have been called floating bridges (driftwood etc)? One really needs to know something of the habits and distribution of the species on the parts of the Continent nearest to us, and whether it is known (or thought) to be migratory there — a point on which there is, I believe, no information.

My doubt (referred to by Mr. Nash) about the Hornsea record was merely because Fowler tells us that the specimen was lost before it could be properly identified; while again, the Cambs. one can hardly be considered quite certain unless supported by a published record. Was the beetle securely determined? It seems rather unlikely that Dr. Moore himself had seen it. Still, the record is *probably* correct, and if so is likely to be the most inland of the British captures. Also, when I wrote, the Yorks. one was much the furthest north and isolated from the rest; but now, that on Ailsa Craig (the sole authentic one for the west of Britain) renders the Yorks. one far less unlikely, while itself the most remarkable and isolated of all. — A. A. A.]

SPRING EMERGENCE OF *LARICOBIOUS ERICHSONI* ROSENHAUER COL.: DERODONTIDAE). — Hammond & Barham have recently added this interesting species to our list (1982, *Entomologist's Gaz.* 33: 35-40), on the basis of specimens taken in Suffolk during the months of May and July. In an attempt to ascertain if the life cycle of *erichsoni* is the same in this country as described by Franz for south Germany (*vide* Hammond & Barham loc. cit. p. 37), I visited the Shrubland Estate, Coddensham, Suffolk on April 19th, 1982, i.e. one month earlier than any published capture date for the species in Britain. Beating Spruce and Douglas Fir resulted in small numbers of *erichsoni* dropping onto the tray — no more than two or three individuals at any one time. This contrasted strongly with my experience of the species in the same locality in the last week of May in 1980, 1981 & 1982, when it occurred very commonly. This would indicate that the species does have the same life cycle here as on the continent, overwintered individuals beginning to appear on the branches in mid-April and peak numbers being found towards the end of May. At the present time, no-one in this country appears to have reported finding the new generation (resulting from the hibernated individuals) in numbers in the year of their conception. — D. R. NASH, 266 Colchester Road, Lawford, Essex. CO11 2BU.

ABNORMAL MORPHOLOGY AND VENATION IN SAWFLIES (HYM., SYMPHYTA)

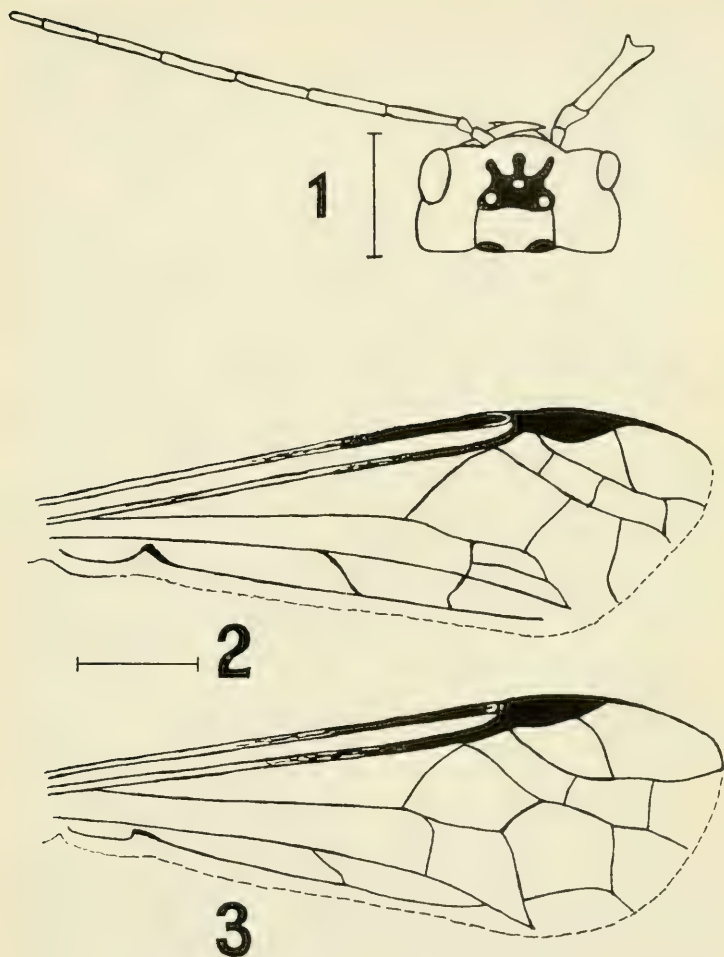
By A. D. LISTON*

Examples of teratology in specimens of Hymenoptera Symphyta are not rare, and have been recorded for most families and genera (Wolf, 1966; Zirngiebl, 1966). Malformation of legs and antennae account for the greatest proportion of cases reported in the literature. The head capsule is probably the next most affected area, then the abdomen, but only rarely the thorax itself. Gynandromorphs are also frequently observed (Nuorteva & Kontuniemi, 1972). As in the Lepidoptera, not only the genitalia may be affected but also body parts that exhibit secondary sexual characters, such as the antennae (Chevin, 1973).

On 12.8.1981 I beat one female and two male *Dineura virididorsata* (Retzius) out of birch at South Park Wood, near Peebles, Peebleshire (NT 235402). The female proved to be teratological. Its right-hand compound eye (viewed dorsally) is abnormally small, though approximately normally shaped, and the right antenna, which shows no sign of post-emergence damage, comprises only three misshapen segments (Fig. 1). These seem similar types of deformity to those recorded by Moller (1975) in a female *Hemichroa crocea* (Geoffroy).

Extreme abnormality of venation, however, seems much more frequent in some groups of sawfly than in others. Particularly affected are some Siricidae, Xiphydriidae and Blennocampinae of the Tenthredinidae. Venation of some other groups varies slightly so that, particularly in the northern species of Nematinae (Tenthredinidae), additional veins may be present in some specimens. Such variation most often involves the number of cross-veins present in the forewing. Frequently only one wing is aberrant, making the specimen asymmetrical. However, I have seen several specimens of *Ametastegia* and *Allantus* species (Blennocampinae of Tenthredinidae) in which venational abnormalities are more extreme than this. Most unusual is the right forewing (Fig. 2) of a female *Allantus cinctus* (L.) trapped by Prof. H. Pschorn-Walcher in the grounds of the Commonwealth Institute of Biological Control's research station at Delémont, Canton Jura, Switzerland, on 7.8.1976. This has three superfluous veins: 1 in C1+C2, 1 in B1, and 1 distally in the anal cell. (Nomenclature of Muche, 1967-70). In addition both the anal cell and cell B2 are open distally because of absent venation (compare Fig. 2 with Fig. 3 which illustrates a normal wing). The left forewing and both hindwings are normal. Hoop (1968) mentions

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Figs. 1-3 — 1, head of adult female *Dineura virididorsata* (Retzius) with deformed right antenna and under-developed eye; 2, right forewing of *Allantus cinctus cinctus* (L.) with abnormal venation; 3, normal venation of *A. cinctus*. Scale lines = 1mm.

and figures several similar examples in the genera *Apethymus*, *Protemphytus* and *Ametastegia* (all Blennocampinae).

It seems possible that the relatively high incidence of deformed venation in these genera might result from the sites chosen for overwintering and pupation. Most species overwinter without a cocoon in the earth, or in bark, rotten wood, plant stems, etc. Possibly the developing wings may be more prone to slight damage

under such conditions than in species which build a cocoon for overwintering. It is interesting to note in this connection that highly aberrant venation also occurs not infrequently in the wood-boring families Siricidae and Xiphydriidae. Deformity of other body parts is not apparently more common in the above groups than in the rest of the Symphyta.

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Notes and Observations

LACANOBIA BIREN GOEZE: GLAUCCUS SHEARS: AN UNUSUAL RECORD. — During a recent illness I have been re-arranging my Noctuid Cabinet. Among the *Lacanobia biren* Goeze (*Hadena bombycina* Hufn.) was a specimen taken in Cornwall on 7th. June, 1970. I am sure I did not record this at the time, but as it was a most unusual capture it should be recorded. All my other specimens came from Aviemore, Scotland. I was staying at a Hotel on the sea front of West Looe and set up a trap on the balcony outside the bedroom french windows. My diary mentions only a few other common species taken with the Glaucous Shears. This appears to be a very unlikely locality for this species and I would like to know if it has been recorded in the south-west on any other occasion. There is no doubt of the identification, verified by Dr. J. V. Banner.

Incidentally, while strolling along the sea front the same morning I saw a butterfly coming in from the sea from the direction of Looe Island which settled on the beach in front of me. It was *Euphydryas aurinea* Rott. The butterfly I assumed must have come from a local colony, perhaps on Looe Island. — R. C. DYSON, 58 Stanford Avenue, Brighton, E. Sussex, BN1 6FD.

CALOTEPHRIA SALICATA HBN.: STRIPED TWIN-SPOT CARPET AGAIN IN SURREY. — On the night of May 31, 1982 I took from my light trap at Bramley a dark grey Carpet moth which I wrongly assumed to be an example of the suffused aberrational form of *Xanthorhoe fluctuata* L., of which typical forms were also in the trap. More careful examination belatedly shows that it is a rather dark male *C. salicata*. The only previous record of this species in Surrey appears to be of one found by the late J. L. Messenger on May 22, 1962, at Wormley Hill, near the spot where his garden light trap had been run on the previous night (*Ent. Rec.*, 74: 175). This specimen, a male slightly less dark than mine, is now in his collection presented to the British Entomological and Natural History Society.

C. salicata is known in Britain as an inhabitant of hill and mountain country, where its larval food is said to be various species of bedstraw (*Galium verum*, *G. saxatile*, *G. mollugo*). It is widespread in Scotland and northern England, and has been recorded in Wales as far south as Radnorshire; South in various editions says that it has been found not infrequently on Dartmoor and Exmoor and once in Dorset; Turner (1955) mentions in Somerset records at Cannington in 1954 and Weston-super-Mare, 1955. In Sussex C. R. Pratt quoted with reserve two records from near Midhurst and one at St. Leonards-on-Sea; but he has now kindly investigated these further and is satisfied that they are mistaken. It is locally well spread from north to south in Ireland.

The origin of the two Surrey specimens must remain speculative. J. L. Messenger suggested that his might have been vagrant immigrant, or an unwilling deportee, perhaps brought in by a neighbouring gardener. The dates, both in 1962 and 1982, coincide with those of immigration of other species across the Channel; but the nearest places of residence of the species on the Continent appear to be in the Belgian Ardennes. Another possibility, still to be investigated, is that *C. salicata* may indeed be a "Surrey Alpine", with colonies above the 600 feet contour from which strays may occasionally reach light traps several miles distant at lower levels, as happens with *Diarsia dahlia* Hbn., *Hepialus fusconebulosa* de Geer, and some other species. — R. F. BRETHERTON, Folly Hill, Birtley Green, Bramley, Guildford, Surrey GU5 0LE.

CONCERNING OBSERVATIONS ON PRECIS OCTAVIA CRAMER IN NATAL, S. AFRICA. — The observations concerning *P. octavia* recorded by Mr. B. K. West (*Ent. Rec.* 95: 6) are precisely those which stimulated me to commence research in the field of seasonal polyphenism in african *Precis* butterflies. Many similar observations were reported in the entomological press early this century and more recently by Clarke & Dickson (1956) also at Durban, Natal.

Experiments with any insect which exhibits seasonal polyphenism must be carried out using controlled environmental conditions, preferably electronically controlled. This was the case with the last series of investigations which I carried out in England during 1975, using *P. octavia* larvae which I had collected from the hills around Byrne, near Richmond, Natal. This work was reported

at the RESL Symposium on Butterfly Biology held in London in September 1981, the proceedings of which should be published later this year.

Unless I am mistaken, the several insects mentioned by Mr. West, although perhaps maintained in similar containers in the one locality, will have pupated at different times of the day and will have experienced different temperatures at the susceptible period when the initial chemical reactions prior to pigment formation are influenced by temperature.

In insects of approximately the same age the emergence of the f. *sesamus* butterflies would also be expected to occur after that of f. *natalensis*, because the rate of development is related to temperature, lower temperatures slowing down the rate of development. — L. McLEOD, Quartier des Ecoles, 84330 St. Pierre de Vassoles, France.

PARORNIX SCOTICELLA STANTON (LEP.: GRACILLARIIDAE) IN KENT. — From leaves containing 'Phyllonorycter-type' mines collected 1.x.1982 on a *Malus* which adjoins the tiger pens at Howletts, Nr. Littlebourne, I have bred five specimens of this species between 27.ii and 10.iii.1983; all left the leaves, preferring to pupate in the tissue paper.

I understand this record is the first confirming its presence in vice-county 15 (East Kent). — N. F. HEAL, Fosters, Detling Hill, Nr. Maidstone, Kent.

MONOPIS WEAVERELLA (SCOTT), A CONTINUING MYSTERY. — Since the history of this tineid moth was reviewed by Bankes (1910, *Entomologist's mon. Mag.* 46: 221-228), *Monopis weaverella* has been found, often commonly, in many parts of mainland Britain and in Orkney. It is most common in wooded country and on heaths and moorlands, especially in the Scottish highlands. In 1953 (*Bull. ent. Res.* 44: 744) Woodroffe reported that he had reared it twice from pigeons' nests, both from the centres of large towns, and once from a jackdaw's nest in the country. Through the helpful agency of Mr. R. G. Adams I have been able to examine two of these specimens, which are in the collection of the M.A.F.F. Slough Laboratory, one from a pigeon's nest from Russell Square, London and one from a jackdaw's nest from Flatford Mill, Suffolk. I was not surprised to find that both were *Monopis rusticella* (Huebner), an abundant species in birds' nests.

In the British Museum (Natural History) general collection is a specimen of *Monopis weaverella* bred in 1935 by H. M. Edelsten from a hedge-sparrow's nest at Balcombe, Sussex. This is apparently the only genuine breeding record of this species, but it was surely an aberrant event. Old birds' nests are collected so frequently not only for moths but for fleas and other fauna, but with this one exception *weaverella* has not been bred this way and its normal food material remains a mystery. The solution may come from whoever is prepared to collect detritus of many kinds, however unpleasant, or perhaps to put out various materials as bait. — E. C. PELHAM-CLINTON, Furzeleigh House, Lyme Road, Axminster, Devon, EX13 5SW.

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CONTENTS

- A New Lycaenid Butterfly from Lesotho, of the Genus *Aloeides* Huebner, E. L. PRINGLE, 173. A Review of British Butterflies in 1982, Dr. C. J. LUCKENS, 175. Four Species of *Megaselia* (Diptera: Phoridae) New to Britain from Hayley Wood, Cambridgeshire, Dr. R. H. L. DISNEY, 181. Notes on Scottish Microlepidoptera, 1982, Dr. K. P. BLAND, 183. A Few Insects from Montserrat, West Indies, J. COOTER, 185. Microlepidoptera — A Review of the Year 1982, Rev. D. J. L. AGASSIZ, 187. The Female of *Agrodiaetus iphigenia nonacriensis* Brown, J. G. COUTSIS, 196. Notes on *Ultraaricia anteros* Freyer (Lep.: Lycaenidae) from Greece, J. G. COUTSIS, 200. Butterflies and Hawkmoths of Kuwait. Dr. W. AL-HOUTY, 202. Notes Concerning the Habitat of, and other Coleoptera Associated with, an Example of *Agonum gracilipes* (Duft.) (Col.: Carabidae), D. R. NASH, 205. Abnormal Morphology and Venation in Sawflies (Hym.: Symphyta), A. D. LISTON, 208.
- NOTES AND OBSERVATIONS, 180, 182, 184, 186, 195, 199, 201, 204, 207, 210-212.
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AND JOURNAL OF VARIATION

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22

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Wanted: Set specimens of the following butterflies:— Pale Clouded Yellow *Colias hyale* and Bath White *Pontia daplidice* both with British data; also Grayling *Hipparchia semele* and Scotch Argus *Erebia aethiops*, both with Yorkshire data. Please state condition as well as price asked.

M. Densley, Clifton Park Museum, Rotherham, South Yorkshire.

*Joint Committee for the Conservation of British Insects –
Butterfly Survey 1983*

National surveys of the Marsh Fritillary (*Euphydryas aurinia*) and High Brown Fritillary (*Argynnis adippe*) are being carried out in 1983. A note in this journal requesting old and new records for the two species has produced an excellent response from subscribers. We would like to thank all those who have contributed to the surveys so far, and to remind those who have not yet sent in their records, that we will be most grateful to receive them. All records will be treated with discretion and acknowledged in the concluding report.

Please reply to: D. J. Simcox
c/o Furzebrook Research Station
Wareham
Dorset BH20 5AS.

GRONOPS INAEQUALIS BOHEMAN
(COL: CURCULIONIDAE):
A WEEVIL NEW TO BRITAIN

By LAURENCE CLEMONS*

Amongst a bag of material swept after dark on the evening of August 3rd 1982 from Murston, North Kent were a number of weevils bearing the general appearance of a *Gronops*. However, they differed from the hitherto sole British species *Gronops lunatus* (Fabricius) in being larger, more robust and of a much darker colour. On the advice of Mr. A. A. Allen I took a specimen to Mr. R. T. Thompson at the British Museum (Natural History) who, in turn, submitted it to Dr. Dieckmann of Eberswalde, East Germany where it was determined to be *Gronops inaequalis* Boheman.

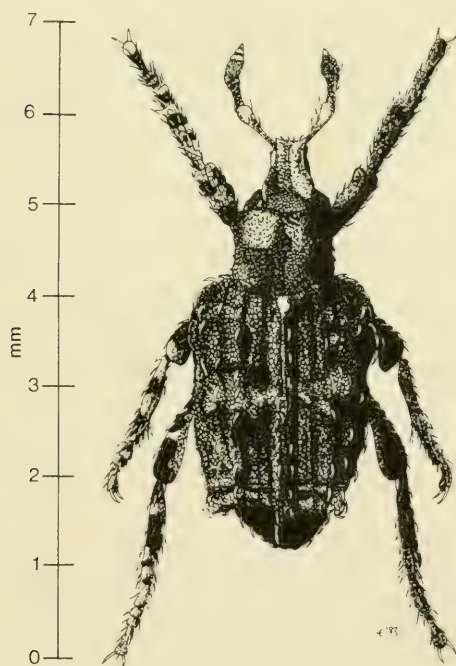


Fig. 1 *Gronops inaequalis* Boh.

In a covering letter Dr. Dieckmann explained that this species was found in Warsaw in 1945 and thence in Sweden in 1946, Bornholm Island in 1954 and Denmark in 1960. A specimen has also been seen from Holland and in parts of East Germany the insect

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is quite abundant. It is mainly active by night and spends the day-time in the soil beneath its foodplant. Although it is probably a polyphagous species it has been found to be closely associated with *Chenopodium album* L. on the continent.

On the evening of August 13th 1983 I revisited the site at Murston in the company of Mr. John Parry with the aim of finding more specimens and elucidating its main foodplant. Chamomile, a reputed host plant for another continental *Gronops* species, was quickly dismissed. Within a short period Mr. Parry found a specimen of *inaequalis* together with *lunatus* on the soil beneath a mat of *Spergularia marina* (L.) Griseb. Eventually it was decided that the occurrence of *inaequalis* under *Spergularia* was most probably accidental and our attention was diverted to *Atriplex prostrata* DC. which was growing with the *Spergularia*. Large numbers of *inaequalis* were subsequently found, not only on the soil surface beneath *Atriplex* but also at the roots, especially when pure stands of the plant were investigated.

The whole insect is illustrated in figure 1 and the typical forms of both our *Gronops* species are so distinct that confusion is unlikely to arise. Nevertheless a brief description of both species is given below as there is always the possibility that a further species may be found in these islands as well as hybrid forms of *inaequalis* and *lunatus*.

Gronops inaequalis Boh.

Size larger, the length measured from the base of the rostrum to the apex of the elytra ranging from 3.96 to 4.72 mm. Width at shoulders 1.47 to 1.9 mm (measured on 15 specimens). Frons with a wide, coarsely punctured depression, deepest at the base, which extends some half way towards the apex of the rostrum. Upper margin of eye strongly raised. Rostrum, in profile, sharply angled above tip of antennal scrobe; dorsally with two more or less regular rows of strong brown setae. Pronotum with three deep foveae in apical half, the middle one extending back to the base as a wide sulcus; closely and coarsely punctured and with scattered scales and brown setae.

Elytra with conspicuous rows of tubercles bearing strong, curved spines which are mainly white in colour. Two prominent lateral tubercles at apical tenth to fifth beyond which the elytra are abruptly tapered. Ground colour dark with conspicuous patches of light scales at the middle and at the level of the lateral tubercles; the central patches appearing as lunules to the naked eye.

Abdomen beneath uniformly clothed with white setae.

Legs with variegated pattern of scales and somewhat densely clothed with coarse setae.

Gronops lunatus (Fabr.)

Size smaller, length 3 to 3.5 mm (based on Joy (1932)). Frons with a shallow depression between the eyes and entirely covered

with relatively large scales. Upper margin of eyes not raised, confluent with vertex. Rostrum, in profile, more smoothly curved above tip of antennal scrobe.

Pronotum more parallel-sided and narrower than in *inaequalis*; the three foveae less pronounced.

Elytra without the prominent rows of tubercles of *inaequalis*, although raised ridges bearing coarse white setae are discernable. Lateral tubercles smaller and the elytra beyond these are more gradually tapered. Each elytron with a conspicuous pattern of light and dark bands, without small white lunules at the middle.

Abdomen beneath with white setae.

Legs more or less as in *inaequalis*; ground colour paler. Scales more uniform in size in *inaequalis*.

In view of the essentially nocturnal habit of *Gronops* species in general, *G. inaequalis* may already be widely established in this country, having gone unnoticed until the present. It is therefore hoped that further records will be forthcoming, since the extent of its distribution may shed some light on how long it has been with us. It will be pertinent to note that the area at Murston lies close to the heart of the Sittingbourne paper industry which utilises wood pulp shipped from Northern Europe, in particular Sweden.

A series of five *Gronops inaequalis* has been presented to the British Museum (Natural History).

Acknowledgements

In addition to those gentlemen mentioned above, I wish to acknowledge the help of Mr. E. G. Philp in the quest for an identity to my initial specimens of the beetle.

Reference

Joy, N. H. 1932. *Practical Handbook of British Beetles*, Vol. 1 p.208.

COMMOPHILA AENEANA HBN. (LEP.: COCHYLIDAE). — On the afternoon of 11th June 1983, under cloudy but bright conditions, I noticed and caught a specimen of this scarce and attractive species. The habitat was the lower slopes of railway cutting through chalk, near Dunstable in Bedfordshire. — K. E. WEBB, 2 Kingsdown Avenue, Luton, Beds LU2 7BU.

THE SCARCE MERVEILLE DU JOUR: MOMA ALPIUM OSBECK IN SUSSEX. — On the night of 2nd July 1983, I accompanied Mr. Steve Church to a large forest in Sussex, where we had four specimens of the above noctuid to light. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex.

THAUMETOPOEA PROCESSIONEA (LINN.)
(THE OAK PROCESSIONARY MOTH) :
THE IMAGO RECORDED IN BRITAIN,
TOGETHER WITH OTHER RARE MIGRANTS
FROM CORNWALL.

By A. P. FOSTER *

On the night of 19/20th of August 1983 a single very worn male of *Thaumetopoea processionea* was taken in my m.v. light trap at Mawnan Smith, Cornwall. This appears to be the first recorded occurrence of the adult in Britain and probably the first genuinely British example. The species was originally reported from this country during the last century by Batchelor (1874), when he claimed to have found a quantity of pupae in an old magpie's nest in a tall pine tree at Ashour Wood, Kent in 1873. It was on the basis of this record that the species was included in Kloet & Hincks (1972). However, these examples were reported under dubious circumstances and were only very doubtfully regarded as genuinely British, see Allan (1943) and Chalmers-Hunt (1962-68).

This species is known from Central and Southern Europe and Asia Minor. The larvae are gregarious, feeding on the leaves of oak and on occasions the caterpillars can reach such high density to be destructive. It would seem highly likely that the individual taken in Cornwall was a casual immigrant, particularly as three other scarce migrant species were taken in the trap on the same night : *Ostrina nubilalis* Hbn. (one male), *Lymantria dispar* L. (one male) and *Mythimna loreyi* Duponchel (one female). In addition, on this night I ran an actinic trap at Kennack Sands on the Lizard Peninsula from 21.21 hours on the 19th to 00.54 hours on the 20th, here a fresh male *M. vitellina* arrived at 22.36 hours.

On the following night of 20/21st August the m.v. light was again operated at Mawnan Smith, this resulted in two further noteworthy migrants being recorded : *Palpita unionalis* Hbn. (one male) and *Rhodometra sacraria* L. (one female).

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Kloet, G. S. and Hincks, W. D., 1972. A Check list of British Insects (Edn. 2). *Handbk Ident. Br. Insects* 11 (2): viii, 153 pp.

* c/o Nature Conservancy Council, 19/20 Belgrave Square, London, SW1X 8PY.

RECORDS OF COLEOPHORIDAE IN NORTH WALES
RECORDS OF COLEOPHORIDAE (LEP.)
IN NORTH WALES

217

By H. N. MICHAELIS*

In the records available to me, there are few from the five Watsonian vice-counties of north Wales and these are mainly from the Annual Report and Proceedings of the Lancashire and Cheshire Entomological Society from 1930 to the mid-1950s by W. Mansbridge, B. B. Snell and R. Prichard, all deceased. Records were kindly supplied by Mrs. M. J. Morgan from the cards at the UCNW at Bangor and the bulk are from my observations of species mainly reared from larvae. I am indebted to Dr. J. D. Bradley of the British Museum for his kind help with identifications.

The Watsonian vice-counties are indicated by their numbers as follows:— Merionethshire (48), Caernarvonshire (49), Denbighshire (50), Flintshire (51) and the isle of Anglesey (52). These are covered by the Ordnance Survey map sheets 23(SH) and 33(SJ) apart from an occasional mention of Cardiganshire (46) in west Wales. Months of occurrence of various stages are shown as i - xii.

The larvae in their later instars construct portable cases of silk and vegetable matter and these are moved freely around their food-plant. Leaves are attacked on the underside by the larva extruded from the case, making blotch mines with an almost central puncture; one larva will feed in a number of mines. Such mines are easily seen on plants with fair sized leaves but are more difficult to find on those with small leaves such as *Thymus* and *Stellaria*. Apart from two common species feeding on seeds of *Juncaceae*, larvae feeding on flowers and seeds especially those incorporating a floret in the case are more difficult to see and are to be found by the hit-or-miss method of gathering a sample of seedheads; a hole in the side of seed will indicate the presence of a larva. Many species hibernate as full-fed larvae and pupate within the case; many of the hibernating larvae of salt-marsh species are frequently inundated by sea water without a noticeable diminuation of numbers, a condition noticed among some Crambinae (Pyralidae) species living in similar situations.

While it is preferable to rear moths, for cases are always a useful guide for identification, a bee-smoker is effective on a summer evening if care is taken against possible fires. For those prone to insomnia, the hour after sunrise gives good results providing there is not a heavy dew. Between 4 to 5.30 a.m. on a June or July morning many species are flying; additionally Elachistidae, Pterophoridae, Pyralidae and to a lesser extent Gelechiidae are on the wing. Strong coffee and biscuits are a necessary, almost vital, preparation for such early activity — alcohol is mainly counter-productive.

*5 Glan-y-Mor, Glan Conwy, Colwyn Bay, LL28 5TA.

Coleophora lutipennella (Zell.) Widespread throughout but not plentiful; mature larvae on *Quercus*, v-vi.

C. flavipennella (Dup.) Easily confused with the previous species, the only authentic specimens are from 49 & 50, det J. D. Bradley; larvae on *Quercus*, v. & vi.

C. gryphipennella (Hbn.) Plentiful throughout; the moth flies at sunset and sunrise in vi & early vii; larvae on *Rosa* species including *Rosa pimpinellifolia* but not observed on garden roses, ix-v.

C. serratella (L.) Larvae plentiful throughout, mainly on *Betula* less so on *Alnus*, *Ulmus*, *Corylus* and *Sorbus*, x-v.

C. cerasivorella Packard. Larvae widespread but never plentiful, on *Crataegus*, *Prunus spinosa* and once on *Prunus padus*, viii-vi; the moth flies shortly after sunrise also at sunset, vii. One on *P. avium* in 50, 1983.

C. milvipennis (Zell.) Larvae on *Betula pubescens* on eastern mosses of 50 and 51. Mature larvae were found in late ix and early x, well concealed on lower leaves of smaller bushes and should be overwintered in a sleeve outside; no sign of feeding was seen in the following spring.

C. siccifolia Staint. Larvae found occasionally on upper leaves of *Betula pubescens* in 48, 49, 51 and Cardiganshire (46) in vii, viii & ix; it is most difficult to rear even when overwintered out of doors. I am uncertain of the status and distribution in Britain and think it must be an uncommon species.

C. viminetella Zell. Larvae are plentiful throughout on *Salix* species, viii-v; the moth flies at sunset and sunrise in vi.

C. vitisella Gregson. Though *Vaccinium vitis-idaea* is local but well established where found in north Wales, I have found only one case in 51, while in neighbouring Cheshire (58) the moth is well established in the few places on high ground where the plant occurs. This is an interesting species to rear on a potted foodplant if the primary case is taken in iv, for it has a spring diapause while the evergreen leaves fall in iv/v until the new leaves mature. If the plant is kept out of doors, moths will emerge the following year after feeding in summer and the following spring. Sometimes pupates on upper surface of a leaf.

C. juncicolella Staint. Overwintered larvae may be beaten in 48, 49, 50 (and probably elsewhere) from heather in iv-v. The moth flies in the late afternoon but is more readily seen at sunrise.

C. orbitella Zell. Larvae are occasional in 51 on mossland *Betula*, ix-x; the mine is smaller than that of *milvipennis* and the larva seems to frequent more mature trees. To rear, it is essential to sleeve larvae on a growing branch until late iv.

C. albitarsella Zell. Larvae local on *Calamintha* on limestone in 49, ix-v. It was found that these larvae would not feed on *Origanum* (a listed food), and I have not found signs of feeding though the plant is fairly common in the area. Has the larva been reared on

Origanum for, in May, the early stages of both plants appear alike, but are easily distinguished by the scent of crushed leaves? When full grown the case is attached to a nearby stone or debris on the ground.

C. spissicornis (Haw.) Occasional moths recorded in 49 and 50, vii. The foodplant is given as *Trifolium repens*.

C. deauratella L. & Z. Moths occasionally taken in morning or in a light trap in 49 and 52, vii. *Trifolium pratense* is the recorded foodplant.

C. lineola (Haw.) Occasional full grown larvae were found on lower leaves of *Marrubium vulgare* on limestone in 49 and 50, v-vi. The abandoned mine turns pale brown and is a good indication of larval presence: pupation is on the main stem just above the root.

C. lithargynella Zell. Well grown larvae are fairly common but difficult to find on the undersides of leaves of *Stellaria holostea* in 48, 49, 50 and 52 from iv-vi. Larvae were found and reared on a "mouse-ear" *Cerastium* species growing in hedgerows in 50, iv.

C. laricella (Hübner.) Larvae are plentiful throughout and easily beaten from established larch, iv-v.

C. lixella Zell. The moth is widespread on limestone in 49, 50, 51 and 52, usually flying in early evening; vi-vii occasionally v. In the early instars, the larva feeds on *Thymus* changing to unidentified grasses from which it cuts a further case; the few larvae found were on grasses adjacent to *Thymus* growing on small ledges or in crevices; iv/v. Larvae will feed on a selection of garden grasses (since found in 51).

C. albidella (D. & S.). The characteristic pistol-shaped cases are locally common near the coast in 52 on *Salix atrocinerea* group and *S. repens*, and are occasional in 50 & 51; iv-vi. Often pupates on the upperside of leaves.

C. pyrhlipennella Zell. Widespread among *Calluna* and *Erica* on mosses and high ground and flies in the evening sun, vii. The keeled slender black case is easily beaten from the heather in v, in ix & x, cases may be found on *Erica*, feeding on the underside of the upper leaves; when, by hanging down, they appear opposite to the upright leaf growth — best seen by lying on the ground.

C. albicosta (Haw.). Common among *Ulex europaeus* and *U. galii*, flying in early evening. Larva in case made from part of the flower and not of the seed pod as sometimes stated; feeds on seeds and hibernates full fed, vii-iv. Usually pupates on a branch but occasionally on grass stems under the bush where it is more easily seen, iv-v.

C. saturatella Staint. Reported in *Ent. Weekly Intelligencer*, 2: 55 as having been found in 1856 at Llangollen (50); and from same locality by C. S. Gregson, in 1860.

C. genistae Staint. One case on *Genista anglica* near Cors Geirch (49) but not reared, v. A suspected mine on this local plant was seen in east 52, ix.

C. discordella Zell. Common throughout among *Lotus corniculatus*, vii. White blotches on leaves indicate presence of larvae.

C. striatipennella Nyl. Occasional specimens in wet places in 50, 51 and 52, vii-viii. The foodplant *Stellaria* was not noticed in the wetland, but *Myosoton aquaticum* was usually present though no larvae were found.

C. inulae Wocke. Restricted to one locality near Deganwy (50) now unfortunately destroyed by building. The long larval case was found in varying sizes on the undersides of leaves of *Pulicaria* from v-viii. Larval growth is spread over two years. It is most difficult to rear even on a potted plant, for many overwintering larvae die. Usually pupates low down on the stem of the foodplant, though occasionally on stems of other plants growing nearby.

C. troglodytella (Dup.). Occurs in all vice-counties, but is locally plentiful among *Eupatorium* and *Pulicaria* in 52, and comes to light, vii-viii. Larval cases are easily found on lower leaves of *Eupatorium* in iv-v. There is variation in the length of the mature cases, though they never approach the length of a mature *inulae* case.

C. peribenanderi (Toll). Local in 49 and 50. The cases are most easily found in ix & x, on *Cirsium arvense* and *Carduus tenuiflorus* near the sea, and are readily detected by the conspicuous whitish mines. Most larvae hibernate full-fed and must be kept outside until v. I have seen cases attached to stems of grasses, brambles and Burnet Rose occasionally during winter.

C. paripennella (Zell.). Larvae are locally common throughout on *Centaurea nigra*, especially on lower leaves in v & vi. The moth is rarely seen during the day but will come to light, vi-vii.

C. benanderi Kanerva. The commonest saltern *Coleophora* in all vice-counties, flying at sunset and after, vii-viii; larvae collected in late ix & x from seeds of *Atriplex*, are easily reared if kept out-of-doors until vii.

C. sternipennella (Zett.). Two specimens in vii, 1966, from waste land near Llandudno Junction saltmarsh (49), flying among *Chenopodium album*, and a few seen there subsequently. Identified by J. D. Bradley.

C. versurella Zell. A few moths were found on the saltmarshes of the Conwy estuary (49) in vii/viii in 1960/80, and though *Atriplex littoralis* and *A. hastata* are common there, no identified larvae have been found. Determined by J. D. Bradley. Unfortunately, the localities for this and the previous species may be destroyed by the present construction of the North Wales Expressway. However, it is possible that *versurella* also occurs on the Lavan sands (49).

C. adspersella Ben. Locally plentiful on salterns in 49 and 50, occasional in 52, and the distribution suggests that it has long been established. The moth flies readily in early evening in vi-vii and may be found paired at sunset. The whitish larval case is found principally on *Atriplex littoralis*; also on seeds of *Halimione* and more

rarely on seeds of *Beta maritima*, from viii-x; it overwinters as a full-fed larva and the cases must be frequently submerged by high tides with no obvious effect on the subsequent numbers of moths. *C. atriplicis* Meyr. Occasional on the Conwy salterns among *Halimione* in vii, though I have not yet found the larva. Determined by J. D. Bradley. The moth emerges almost a month later than *C. adspersella* and flies over foodplant at sunset. The cases are frequently submerged by winter and spring tides.

C. artemisicolella Bruand. There is an old record in *Ent. mon. Mag.* 64: 76 (1928), of one taken in 1924 at Llandudno by E. G. R. Waters among *Artemisia vulgaris*.

C. murinipennella (Dup.). Though the foodplant *Luzula campestris* is widespread, the moth is uncommon in 48, 49 and 51 but may be overlooked, vi.

C. taeniipennella (H.-S.). First taken by Mrs. M. J. Morgan in 49 and later found sparingly in 52, vii. Determined by J. D. Bradley. The various species of *Juncus* on which the larva feeds are common in north Wales.

C. glaucicolella Wood. A common saltmarsh species easily bred from cases found on seeds of *Juncus maritimus* and *J. gerardii* in iv/v; the moth flies low among the rushes at sunset in vii-viii and emerges about a month later than the common *C. alticolella*.

C. alticolella Zell. Common throughout among *Juncus* species from sea level to over 2,000 feet, where it flies both by day and night in vi-early vii. Larval cases are abundant in late summer and autumn feeding on the seeds; on higher ground appears to prefer those of *J. squarrosus* to other species.

C. tamesis Waters. One at light at Bangor (49) by Mrs. M. J. Morgan in July 1975 is our only certain record. Determined by J. D. Bradley. The larva feeds on seeds of *Juncus articulatus*, a common rush in north Wales.

C. maritimella Newman. Though I have not seen the moth in the wild, it can be reared from the seeds of *Juncus maritimus* gathered in winter on edges of salterns in 49, 50 and 52.

C. adjunctella Hodg. Bred from seeds of *Juncus gerrardii* gathered in winter and kept outside until v; is local in all vice-counties where the plant is well established. The larval case, which is formed partly of a floret, is very difficult to find. The moth has been taken occasionally in late vi.

C. serpylletonum Hering. As far as I know, this species occurs only on the Creuddyn limestone at Llandudno (49) and in West Cornwall. I should be glad to hear of any certain records from elsewhere. The overwintered larva is in a dark brown case made up of several leaves of *Thymus drucei*, set sideways one above the other. In v-vi, it mines leaves towards the end of a spray and is most easily found on ledges and in crevices where the thyme is isolated from other herbage, though it can be found with more difficulty where

the plant grows in limestone turf; yellowish brown mined leaves often indicate the presence of a larva nearby. It is essential to rear the larvae on a potted plant for enclosure usually results in death. The normal flight is uncertain, probably after dusk, and it may be smoked out in the evening in vii-viii.

C. violacea (Ström) (*paripennella* sensu auctt.) A typical winged case was found on Sweet Chestnut (*Castanea sativa*) near Llandudno (49) in ix together with two mines in which the upper cuticles were also pierced — a typical habit of this larva. I do not find *Castanea* listed as a foodplant though the late Basil Snell and myself frequently found cases on young saplings at Delamere, Cheshire in the 1950s.

A SECOND RECENT LOCALITY FOR ELEDONA AGRICOLA (HERBST) (COL.: TENEBRIONIDAE) IN V.C. 17. — Mr. A. A. Allen (1979, *Entomologist's mon. Mag.*, **114** (1978): 156) has recently confirmed the presence of this species in Surrey by publishing his Box Hill locality. I can now 'add' Richmond Park by virtue of two specimens found on the 9th April this year (1983). These were both taken from a long since dead and very hard fungus at above head height on oak (TQ1872). In Fowler, 1891, *Col. Brit. Isl.*, **5**: 13 it seems that both these localities were noted last century and so have, in effect, been confirmed, since Brendell, 1975, *Handb. Ident. Br. Ins.*, **5** (10): 6 has cited only the more recent records. — D. PRANCE, 23 Brunswick Road, Kingston Hill, Kingston-upon-Thames, Surrey.

THE WHITE SPOT: HADENA ALBIMACULA BORKH. IN SURREY. — A specimen of this moth turned up in my light trap here on the night of 3rd June 1983. It was a female in very poor condition. The following night at Dungeness, Kent, produced several examples of this species which were in excellent condition. — G. A. COLLINS, 15 Hurst Way, S. Croydon, Surrey.

THE DEATH'S HEAD HAWK: ACHERONTIA ATROPOS L. IN 1983. — I think it is worth reporting that a fine Death's Head Hawk came to the bright lights at the Goonhilly "Earth Station", Cornwall, on June 14th, and was found by Mr. N. Exebly, who is an engineer there. — F. H. N. SMITH (Dr.), Turnstones, Perrancombe, Perranporth, Cornwall TR6 0HX.

PELOSIA MUSCERDA HUFN.: DOTTED FOOTMAN IN KENT. — I took a male specimen of this moth on the night of 16th July 1983, during the field meeting of the British Entomological and Natural History Society at Orlestone Forest, Kent. It was attracted to the m.v. light on Brigadier Simson's sheet, and as he already possessed the species kindly offered it to me. — G. A. COLLINS, 15 Hurst Way, S. Croydon, Surrey.

TACHYDROMIA TERRICOLA ZETT.
(DIPT.: EMPIDIDAE) NEW TO BRITAIN

By A. A. ALLEN, B.Sc., A.R.C.S.*

On 11th July 1973, on a visit with my late friend G. Shephard to the sandpit near Lydd, East Kent, already referred to more than once in the literature, I caught a small Empidid fly running on fairly dry sand. Examination much later showed it to be (apparently) a *Tachydromia* (*Sicodus* auct.), in rather poor condition. It could not be named from Collin's key (1916:81), since it had no dark cross-bands on the wings yet was evidently not *halterata* Col.; but *terricola* Zett. "which should be found in Britain" (p.83) appeared, from the information given, a strong possibility. The fly was submitted to Mr. K. G. V. Smith, of the BMNH, who agreed that it certainly seemed to belong to that species, but that a male was desirable to clinch the matter.

On 1st June, 1978, I revisited the locality with my friend Alex Williams and made a point of working for the insect. It proved quite hard to locate, indeed I had almost given up hope after a two-hour hunt when it turned out that the one very restricted spot in the whole pit (as it seemed) inhabited by my quarry was that on which — guided by who knows what obscure intuition or kindly daemon? — we had dumped our baggage! This was a slight shallow depression in the sand not far from the edge of the lake filling the bottom of the pit, but dry on the surface. The rather common *T. aemula* Lw. occurred on bare or lightly vegetated ground over most of the pit; at the spot just mentioned, however, it was accompanied by the new British species very sparingly. I managed in the time available to secure half-a-dozen, including two males, by grubbing at the roots of the thin herbage and in the open among fragments of plant debris etc. — the habits of the two species being as far as I could see quite alike.

A pair, subsequently confirmed from the male as *T. terricola*, has been placed in the National Collection.

As above indicated, this *Tachydromia* may at once be known among those recorded as British by its comparatively clear, unbanded wings which are only faintly clouded longitudinally, and apically in cell R3, combined with pale halteres and very extensively pale legs. Chvála (1975) gives a description (pp.230-1) and figures the male middle leg (p.230), genitalia (p.232), and wing (p.303 fig. 755). He records it (p. 232) as uncommon, but well distributed over north and central Europe, in sandy coastal biotopes (and according to Loew "in grasses"). The Lydd sandpits, though not *on* the coast, are near it and their fauna is in great part a maritime one. Because of the extraordinary degree of identity

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found between the rarer and more characteristic Coleoptera of the Lydd pits and the similar one near Rye Harbour (Sussex), well known to several entomologists, it is highly probable that *T. terricola* occurs also at the latter place. In fact, I retain a distinct impression of having seen there (about 1970) what was most likely that species, but had then no reason to think it anything out of the ordinary.

Acknowledgement

I am indebted to Mr. K. G. V. Smith, our leading expert on the family, for his authoritative determination.

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THE PURPLE MARBLED: EUBLEMMA OSTRINA HBN. AT PORTLAND. — On the night of 17th June 1983, I took a female of this rare migrant moth at light near Church Ope Cove, Portland, Dorset. A few *Autographa gamma* L. and *Nomophila noctuella* D. & S. accompanied it. I failed to obtain eggs over the next week from the moth, which was in mint condition and of the form *carthami* H.S. Eventually I set it whilst it still retained a few scales. — A. J. PICKLES, 2a Park Avenue, Lymington, Hampshire.

XESTIA CASTANEA ESP.: GREY RUSTIC IN KENT. — From a larva of this species which I swept from heather on 26th April 1983 in a heathy wood near Hawkhurst, I bred a female moth of the dark reddish form on 10th August. This appears to be the first record of occurrence of *X. castanea* in Kent since one was taken at Lee by C. G. Bruce in 1952 (cf. Chalmers-Hunt, *Butterflies and Moths of Kent*, 2 : 136). — J. PLATTS, 11 Maydowns Road, Chestfield, Whitstable, Kent.

EUPROCTIS CHRYSORRHOEA L. IN LONDON. — While passing David Copperfield Gardens in the New Kent Road today I noticed many trees infested with *Euproctis chrysorrhoea* larvae, in particular the flowering cherries. — L. CHRISTIE, 129, Franciscan Road, Tooting, London SW17 8DZ. 10.vi.83.

THE HUMMINGBIRD HAWKMOTH IN 1983. — Yesterday, 12th June, at a little after 2.00 pm, my wife and I watched a *Macroglossum stellatarum* L. feeding in sunshine at the red valerian, *Kentranthus ruber* for about half an hour. The temperature was 19°C or 2 or 3 degrees lower than the previous few days. The only occasions when we have seen *M. stellatarum* in the garden in the last 20 years have both been in mid-July in 1976 and 1979. — M. R. HALL, "Hopefield", Norwich Road, Scole, Diss, Norfolk IP21 4DY.

RECORDING LEPIDOPTERA IN THE COTSWOLDS
DURING 1982

MICHAEL N. MCCREA*

1982 has proved to be both an interesting and rewarding year for lepidoptera here in Gloucestershire. Although the season opened with some of the coldest temperatures of all time in the county, the arrival of moths to my actinic trap at Nailsworth was moderately consistent. A surprisingly mild evening on January 30th produced a large number of moths, particularly *Operophtera brumata* L. *Erannis defoliaria* Cl. was comparatively abundant and a few *Apocheima pilosaria* D. & S. were also noted. The following evening, after this propitious start to the season, I ventured out onto the nearby common, armed with a tilley lamp, where I found plenty of *Theria primaria* Haw. and several *Agriopis marginaria* Fabr. The rest of February remained rather mild, but very wet, with temperatures in the low 50s. On February 28th my Nailsworth trap brought in the first *Alsophila aescularia* D. & S. of the year, as well as a further influx of *O. brumata* L.

My activities were limited during the first two weeks of March, but during the latter part of the month I visited Painswick Beacon with the specific purpose of seeking *Panolis flammea* D. & S. I was joined by my colleague Mr. David Cooper, who has provided me with companionship on many a field trip. By now the swallow blossom was in full bloom, and, with an overcast sky above, our thoughts were very optimistic indeed.

We placed a tilley lamp on a white sheet, beneath several selected fallows, and commenced beating. In no time at all our sheet was covered with moths as well as other debris dislodged by our over-enthusiastic physical exertions. *Orthosia gothica* L. was undoubtedly the most numerous species present, with about 500 counted during the course of the evening. Other visitors included *Orthosia miniosa* D. & S. (2), *O. populeti* Fabr. (3), *O. munda* D. & S. (100), *O. cruda* D. & S. (45), *Xylocampa areola* Esp. (5) and a very worn *Lithophane socia* Hufn., but no *P. flammea*. This seemed strange to me, as there is a good supply of Scots pine in the vicinity, and my friend Mr. John Newton has taken a fine series from this area in recent years. Several further visits to the site failed to produce the moth.

April opened with the first really sunny days of spring, and, with the thermometer at 60°F on the 4th, quite a few of the hibernating butterflies were in evidence. Throughout the Stroud district, many *Aglais urticae* L. were active around stinging nettles, with the occasional *Gonepteryx rhamni* L. making an appearance. On April

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17th Mr. Cooper and I set out towards Daglingworth near Cirencester, on a mild but blustery evening that yielded little of interest except a few *Eupsilia transversa* Hufn. and *Diurnea fagella* D. & S., the latter swarming around our lamp in huge numbers. Despite the lack of activity, however, we were rewarded by the overhead roding of a woodcock, and a couple of inquisitive tawny owls.

On April 29th I sugared a stand of poplars near my home at Nailsworth, and whilst examining the visitors after dusk, I boxed a moth which at first seemed unfamiliar to me. On examining it later, I was delighted to confirm a specimen of *Egira conspiciellaris* L. This species appears to be extremely local in Gloucestershire with previous records occurring very infrequently. May opened with glorious sunshine which was prevalent throughout the rest of the month. On the evening of May 19th I visited Standish Wood, a popular site on the most western escarpment of the Cotswold hills. The night was very warm and muggy with a mild south-westerly breeze. We positioned our heath-trap along a woodland ride which presented both deciduous and coniferous cover. After a short while our sheet was seething with moths, so much so that it presented us with the frustrating task of calculating the numbers of visitors on an almost continual basis. 30 species of macros were recorded, the most interesting of these being *Ectropis consonaria* Hb. (4), rather local in this part of the county, *E. crepuscularia* D. & S. (2), *Plagodis dolabraria* L. (2), *Horisme vitalbata* D. & S. (1), *Ecliptopera silaceata* D. & S. (9), *Lampropteryx suffumata* D. & S. (5), *Thyatira batis* L. (4) and *Ptilodon capucina* L. We were also interested to note the extremely large numbers of *Colocasia coryli* L. About 300 were counted during the evening, the most I have ever seen at one time.

On May 20th an afternoon walk near Stroud in very hot conditions produced plenty of butterflies. The fields were alive with *Pieris napi* L., *Polyommatus icarus* Rott. and *Anthocharis cardamines* L. At nearby Hawkwood a small colony of *Hamearis lucina* L., which I have been observing for several years now, was thriving, together with *Erynnis tages* L. and *Pararge aegeria* L. I also noted *Euclidimera mi* L. and *Ectypa glyphica* L. Whilst examining a small clump of wild rose at this site, I found about 12 cases of *Coleophora gryphipennella* Hb. I collected several of these and moths bred from them emerged between August 2nd and 5th. On May 26th I again operated my actinic trap in the garden at Nailsworth. Some interesting moths came to the light, 43 species in all, including, *Electrophaea corylata* Thunb. (6), *Eppirhoe rivata* D. & S. (40), *Biston betularia* L. (typical 7, f. *carbonaria* Jord. 4), *Cilix glaucata* D. & S. (2), *Hadena rivularis* Fabr. (5), *Furcula furcula* L. (2) and a very large female *Cerura vinula* L. The following morning I was surprised to discover at Nailsworth, about a dozen larvae of *Notodonta dromedarius* L. feeding on lime. I collected six of these and moths bred

from them emerged during the first week of August. South (1961, *The Moths of the British Isles*) states that the larvae of this species feed "on birch, alder, and sometimes hazel, usually on the former, in June, July and August". This appears true from my experiences with the species, I have never before encountered the larvae feeding on lime.

During June temperatures soared into the 80s and a succession of hot and muggy evenings between June 3rd and 16th produced vast numbers of moths at my Stroud actinic trap. Although the diversity of species was rather low, the incredible multitudes were adequate compensation. During these two weeks a total of 48 species of macros were recorded; amongst the more interesting ones were: *Acasis viretata* Hb. (2), *Semiothisa notata* L. (3), *Autographa pulchrina* Haw. (6), *Tyria jacobaeae* L. (45), *Callimorpha dominula* L. (4) and at least 1,000 *Noctua pronuba* L. With the warm weather continuing into the first week of July, my colleague and I found ourselves in the New Forest for a few days. During our brief stay, we were fortunate in obtaining several *Catocala sponsa* L. from the Minstead area. Our portable m.v. lamp brought in a large assortment of moths including *Hyloicus pinastri* L. (3), *Stauropus fagi* L. (6), *Zeuzera pyrina* L. (2), *Boarmia roboraria* D. & S. (2, at sugar) and *Amphipyra pyramidea* L. (8, at sugar).

On returning from the Forest on July 12th, I visited Edge Common near Gloucester. The site is excellent for many species of butterflies and moths, consisting of open limestone grassland and scrub with mature deciduous and coniferous woodland. Although a slight drizzle persisted during the greater part of the evening, this did not deter insect activity. A fairly extensive sugar round was established and this proved highly successful with *Amphipyra pyramidea* L., *Thalpothila matura* Hufn. (9), *Peridroma saucia* Hb. (2), *Agrotis ipsilon* Hufn. (5), *Scoliopteryx libatrix* L. (4) and *Phlogophora meticulosa* L. (2). The most spectacular sight at sugar however, was of no less than 500 *Mythimna pallens* L. and *M. impura* Hb. on one patch. Our actinic trap was doing well also, with 56 species of macros. Amongst these were *Eremobia ochroleuca* L. (3), *Lymantria monacha* L. (2), *Philudoria potatoaria* L. (5), *Melanthia procellata* D. & S. (7), *Eulithis prunata* L. (12), *Perizoma flavofasciata* Thunb. (2), *Selenia dentaria* D. & S. (1) and *Drepana cultraria* Fabr. (8). We returned to the site the following evening, this time joined by Mr John Mcfeely, but poor weather conditions resulted in a poor catch at both light and sugar. Nevertheless, despite recording most of the species from the previous evening, we noted *Ennomos alniaria* L. (6), *Pheosia gnoma* Fabr. (8), *Ypsolopha sequella* Cl. (4), *Agapeta zoegana* L. (9), *Aphomia sociella* L. (14) and *Hypsopygia costalis* Fabr. (2).

August was congenial for the time of year, although most of the sunny days were intermitted by the occasional rain storm.

On August 20th I visited Randwick Wood near Stroud, where many butterflies were on the wing. *Melanargia galathea* L. was plentiful, with a sprinkling of *Thymelicus sylvestris* Poda., *Maniola jurtina* L. and *Pyronia tithonus* L. Several *Lysandra coridon* Poda and *Aricia agestis* D. & S. were also present. A further trip to Minchinhampton Common that afternoon produced a good number of *Cupido minimus* Fuessl. and *P. icarus* Rott., the former species enjoying a successful season throughout the county. On August 29th my Stroud trap brought in several *Arctia caja* L. and a large influx of *Autographa gamma* L. The latter species appeared sporadically throughout September and well into October. During September there occurred an evident invasion of *Cynthia cardui* L. throughout the Stroud area, or possibly offspring from a spring immigration, although many of the singletons observed were in very poor condition. This invasion continued well into October, the last one being noted on the 14th. During a surprisingly mild spell the first half of October, *A. urticae* L. swarmed on the last few blooms of buddleia, together with *Vanessa atalanta* L. and *Polygonia c-album* L.

The last week of October was extremely wet and temperatures declined dramatically. The absence of anything substantial to my Stroud trap on October 31st, indicated that winter was nearly there. On November 4th however, a mild evening yielded *Colotois pennaria* Hb. (a few) and *Eppirita autumnata* Borkh (3). Late November saw a sharp change in the weather, and a series of cold frosts during the last few days of the month more or less closed my activities for the year. In complete contrast, the latter part of December was exceptionally mild, and whilst visiting a friend at Slad near Stroud on the 19th, I observed large numbers of *Poecilocampa populi* L. The following day I paid a return visit to Edge Common in very windy conditions where I beat *Caloptilia betulicola* Her. (4) and *C. alchimiella* Scop. (2), thus closing, for me, an enjoyable year of activity.

Acknowledgements

I would like to express my thanks to Mr. J. Newton for his interesting and helpful correspondence, past and present, and Mr. D. Cooper for an interesting working relationship.

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APIUM NODIFLORUM: A PREVIOUSLY
UNRECOGNIZED FOODPLANT OF
DEPRESSARIA ULTIMELLA STAINTON

By R. J. HECKFORD*

On 4th May 1972 I took a worn *Depressaria* at Saltash, Cornwall. In late 1981 I dissected it to discover it was a male *D. ultimella* Stainton. The only other Cornish records of which I am aware are three specimens taken by the Revd. D. J. L. Agassiz at Treyarnon on 27th August 1970 and one taken by Dr. J. R. Langmaid at Verryan on 8th. September 1978.

Meyrick (1928) gives only *Oenanthe aquatica* as a foodplant and describes the species as common. However by Meyrick's definition a species is common if it is found wherever its foodplant is plentiful. *O. aquatica* is distinctly local. Margetts and David (1981) do not record it from Cornwall.

Emmet (1979) adds *O. crocata* and *Sium latifolium*. *O. crocata* is common in Cornwall but *S. latifolium* is not recorded. Spuler (1913) and Toll (1964) both give *O. aquatica* and *S. latifolium*. Palm (1973) simply states "*Oenanthe*, *Sium*".

On 11th. July 1982 I revisited Saltash to look for larvae. I had taken my specimen in a lane having a hedge on either side and a small stream at one side. There were a few plants of *crocata* and a quantity of a plant which I subsequently identified as *Apium nodiflorum*. No larvae were feeding on the *crocata* but the stems contained pupae. I suspected that these were too large and too early for *ultimella*. Indeed in due course they produced *D. daucella* D. & S.

I then noticed that several tips of *nodiflorum* were withered. On splitting open the stems I found some very small larvae. Some were feeding in stems just below the tip, others were further down but in every case there was only one larva in each plant. Because of the withered stems it was very easy to see which plants contained larvae. It was clear that the larvae were quite common.

On my way home I examined some *nodiflorum* at Plymouth and immediately found similar larvae. Between then and 5th. August I found larvae in several localities in Devon. All were in *nodiflorum*. I found none in *crocata*, although in most places it grew nearby. Thereafter I found only pupae. In all I found the species in fourteen localities in Devon.

As the larvae grew they moved down the stems. Most of the pupae were very low in the stems. Some were even in stems under water. How the adult emerges in such circumstances I could not tell. Dr. J. R. Langmaid noticed in Hampshire, stems with exit

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holes plugged with frass. By mid August it was difficult to find tenanted stems as the rest of the plant had decomposed. The tenanted part was then covered by the growth of unaffected plants.

Generally the larvae appeared to prefer *noaiflorum* growing in small ditches by roadsides rather than that growing more luxuriantly in streams.

Meyrick describes the larva of *ultimella* as pale green; dots dark brown; head pale brownish. Emmet says it is whitish green with head black. My description of the young larva was: head shining dark brown, plate yellowish brown; body yellowish, pinacula dark brown; anal plate transparent. By the fourth instar the head and plate were light red brown; body light grey, pinacula black; anal plate transparent. In the final instar my description was: head shining red brown, plate yellowish; body greyish green, pinacula black; anal plate yellowish.

On 31st. July the first specimen of *ultimella* emerged. Emergence continued until late August.

Emmet does not record any species of microlepidoptera feeding on *A. nodiflorum*. As I found *ultimella* almost wherever the food-plant occurred it is obviously an established foodplant. As *A. nodiflorum* is widespread it is likely that *ultimella* will now be found more commonly.

Dr. Langmaid and I reared some parasites which Dr. A. A. Allen and Dr. M. R. Shaw have kindly identified. Dr. Langmaid's were all reared from larvae taken at Droxford, Hampshire. They were *Barichneumon lepidus* (Gravenhorst), *Phaeogenes stipator* Wesmael and *Dicaelotus morosus* Wesmael. Mine from two localities in Devon were all *D. morosus*. *P. stipator* is a fairly common species and the other two are not uncommon.

Acknowledgements

I am grateful to Dr. J. R. Langmaid for his assistance in the preparation of this note, to the Rev. D. J. L Agassiz for his records and to Dr. A. A. Allen and Dr. M. R. Shaw for their identifications of and information about the parasites.

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THE MARBLED GREY: *CRYPHIA RAPTRICULA* HBN. IN KENT. — I wish to report the capture of the fifth British specimen of this noctuid moth, at m.v. light on the night of the 20th June 1983, at Dungeness, Kent. The wind that night was a light S.E., the temperature cool, with a night minimum of 12°C. — P. H. STERLING, Department of Agricultural and Forest Sciences, Commonwealth Forestry Institute, South Parks Road, Oxford [The previous records are: 1953: Arundel, Sussex, male in m.v. trap, 12.viii (Haggett, *Ent. Gaz.*, 5: 94A). 1955: Southsea, Hampshire, one in m.v. trap, 18.viii (Langmaid, *Ent. Gaz.*, 7: 112). 1969: Worth, Kent, one 9.viii; Sandwich Bay, Kent, one 9.viii, both taken by T. W. Harman (Chalmers-Hunt, *The Butterflies and Moths of Kent*, 3: 252). — J.M.C.-H.]

ARCHIEARIS NOTHA HBN.: LIGHT ORANGE UNDERWING, THREE YEARS IN PUPAL STAGE. — In June 1980, I found some larvae of *A. notha* in Orlestone Forest, Kent, one of which produced a moth on the 26th April 1983. — J. V. BANNER, 41 Varndean Gardens, Brighton BN1 6WJ, Sussex.

LARVA OF THE DOTTED CHESTNUT: *CONISTRA RUBIGINEA* D. & S. IN THE WILD. — It may be of interest to report finding a larva of this local moth feeding on an apple tree here in my garden. I found the larva, which was approximately 3 mm. long, exposed in daylight near the terminal shoot of a low branch on 7th May 1983. There was evidence of its feeding, and it has now become an unmistakably full grown larva. I have in the past had occasional specimens of the moth to my garden m.v.l. including a female on 8th April this year. The apple is of the Worcester variety. — A. J. PICKLES, 2a Park Avenue, Lymington, Hampshire.

ETHMIA BIPUNCTELLA F. IN HAMPSHIRE. — I took in my m.v. trap here on the 16th August 1983, a specimen of *E. bipunctella*. As it was accompanied by *Rhodometra sacraria* L. and *Mythimna vitellina* Hbn. and there is no *Echium* locally, it was probably a migrant. The only previous record for the county is of one for Alverstoke on 7.viii.1967. — E. H. WILD, 7 Abbots Close, Highcliffe, Christchurch, BH23 5BH.

THE ARGENT AND SABLE: *RHEUMAPTERA HASTATA* L. IN SUSSEX. — During a visit to a Sussex wood on 30th May 1983, I noted three of this pretty geometrid in good condition flying in a birch-lined ride in the afternoon sun. Mr. S. Church tells me this is a scarce moth in the county. — D. DEY, 26 Manor Avenue, Hassocks, West Sussex.

A MODERN REVIEW OF THE DEMISE OF *APORIA CRATAEGI* L.: THE BLACK-VEINED WHITE

By COLIN PRATT*

(Concluded from page 166)

HABITAT CHANGE

Recently Morton (*loc. cit.*) suggested that, in common with *Maculinea arion* L., *A. crataegi* disappeared because both species had become "victims of a changing countryside", although even to this day some former localities have altered little. At the time of the latter's decline, McLachlan (1893) wrote "there have been no great changes in the physical condition of its former localities", Goss (*loc. cit.*) having made the same point earlier. It is therefore apparent that habitat change or loss played little part in this extinction.

PARASITES

Martelli (*loc. cit.*) recorded much detailed information on the parasites affecting the black-veined white in Italy during the late 1920s. There is no doubt that parasitism can be heavy in the species as he noted that in one area more than three-quarters of the larvae examined eventually died owing to the attentions of a total of seven species of parasite. Stellwaag (*loc. cit.*) reported similar occurrences from Germany and listed more than a dozen parasitic species from *A. crataegi*. *Apanteles glomeratus* held a prominent position among the parasitic species mentioned, and in modern times it has been named in connection with larval losses encountered within continental introductions of *A. crataegi* in this country. This parasite alone has been reported as causing 100% lethality in *P. brassicae* larvae in Germany (Feltwell, 1982). However, there is no evidence that parasites contributed at a primary level to the fluctuations in population of the butterfly under review in this country; unusually high losses due to this cause were not reported at the time and the likelihood of this being noticed would have been high.

PESTICIDES

Heath (*loc. cit.*) suggests that pest-control measures by fruit-growers in Kent may have been the cause of the insect's final extinction in this country. In Kent, the use of insecticides on apple-

*"Oleander", 5 View Road, Peacehaven, Newhaven, Sussex.

trees commenced before the last quarter of the 19th century when quicklime was used to kill lepidopterous ova, presumably mainly of the winter moth. By the turn of the century the more advanced fruit-growers sprayed systematically with quassia, soft soap, and paraffin emulsion; a few used Paris green (cupric acetoarsenite) alone. According to ADAS (pers. comm.), the use of these sprays increased dramatically after the first world war, substantially with arsenic compounds; additives such as the fungicidal Bordeaux mixture also came into use, making a wider spectrum spray. How widely these chemicals were used in, and their exact effect on, the black-veined white's very local last strongholds are not known. It is *just* possible that when the butterfly was reduced to a very few colonies, as it was after the first world war, ill-timed spraying by fruit-growers delivered the *coup de grace*; but chemicals played no larger part in this disappearance and it is much more likely that they did not materially contribute to its departure at all.

SUMMARY

Examination of the available national average weather records from the earliest dates possible for temperature and rainfall on a monthly, seasonal, annual and twenty-year-running-average basis since the 17th century shows that the only significant relationship with the fluctuations of *Aporia crataegi* L. is that of September rainfall; high rainfall during this month over successive years, both in the short and long term, seemed to be linked to low numbers and the butterfly's ultimate extinction in this country. There seems little doubt that the cause of the disappearance was multifactorial — the unique coincidence of several adverse influences. There is considerable circumstantial evidence to suggest that the butterfly was severely affected by a disease in historical times. There are inferential indications that a fungal epizootic was the most probable disease encountered, although the possibility of a virus disease cannot be eliminated. With disease being the primary culprit, it is likely that avian predation also contributed heavily to the decline, with other of the more usual deleterious factors following.

To conclude, I believe the black-veined white became extinct in Britain because of a coincidence of both natural and man-made pressures, these being a prevalent climatically induced disease and an increase in predation by birds, due to changing attitudes towards conservation, game and agriculture. Nevertheless, as Barrett (1893) said, "much mystery hangs over this species" in this country, and some always will.

Acknowledgements

During the research for this article several different disciplines

were encountered, including meteorology, ornithology and entomogenous diseases; the author claims no expertise in any of these and has consequently drawn extensively on the authoritative published work of experts, to whom any credit is due.

My thanks are due to Mrs. I. Amos and all the library staff at Brighton Polytechnic, and to Mr. H. Rimmington and the computer staff of the same establishment. I am also indebted to Mr. P. W. Cribb for detailed information on his breeding experiments with the black-veined white. I would especially like to express my gratitude to Mr. R. F. Bretherton for his assistance with records, and to Col. A. M. Emmet for constructive criticism during the final stages of the paper.

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EPIPHYAS POSTVITTANA WALK.: A SEQUEL. — Having taken a single specimen of the above Tortricid at m.v. light here last year (*antea*: 120), it was with more interest than surprise that I encountered several of these moths attracted to a wall-lamp in a by-way not far distant on the night of 7th June 1983 — that is, almost exactly a year later. It was, in fact, the very spot where an *Epichoristodes acerbella* Walk. had occurred five years previously (*Ent. Rec.*, **92**: 33). I took four of the *postvittana*, which, though showing some little variation, are all of the more typical and easily recognizable form with basal area of forewings contrastingly pale — unlike the 1982 example. They are in good order, one female being particularly fresh and perfect. The arrival of the species in this district must surely be very recent. Further captures in the south-east can now be confidently expected. — A. A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

SOME NOTES ON *POLYPOGON STRIGILATA* L.
(LEP.: NOCTUIDAE)

By B. ELLIOTT*

This charming hypenid moth, better known as *Herminia barbalis* Clerck, has as its vernacular name the 'Common Fanfoot', a name which seems to belie its modern status since 'Scarce Fanfoot' would be more appropriate.

Distribution

During the latter half of the 19th century, Morris (1872) gave its distribution as from York to Birkenhead in the north and Tenterden to Arundel in the south, with an east-west spread from Stowmarket to Marlow and through to Worcester. The species figures frequently in early county lists, such as those for Yorkshire and Nottinghamshire by Porritt (1904) and Carr (1916) respectively, but there are apparently no more recent records for these counties. Indeed, after conversations with many lepidopterists, it seems that the species now occurs only locally in the southern central region of England (there are some old, but no recent records, for Ireland). The principal areas of occurrence now seem to be based in the oak woods of Berkshire and, to a lesser extent, the woods in south-east Kent. These two areas are the only places where I have personally seen the moth. Its distribution in Kent is well written up by Chalmers-Hunt (1962-81). For Wiltshire, de Worms (1962) describes it as 'fairly common', but I know of no recent records for that county.

My first encounter with this species was a male moth tapped out of an oak tree in Orlestone Woods, Kent, late one afternoon in mid-June 1969. I did not see the moth again until June 1981 when, in the company of Bernard Skinner, I captured a worn female in a Berkshire woodland where he had seen five males the previous week.

Rearing Notes

I took the female home, and since it was in a worn state fed it at once on a dilute sugar solution. (NB. It has been my experience that members of this species' group desiccate easily, so an early feed and a humid atmosphere are advisable).

I have not been able to trace any complete account of rearing this species, so the following description of its life history may be useful.

*"Three Pieces", Vernon Lane, Kelstedge, Derbyshire.

21.6.81. I placed the female in a plastic container with oak and birch leaves and black netting after carefully feeding it again dilute sugar and honey solution. A search through the literature that evening for any information produced an excellent brief description of the ovum by Haggett (1953), and a description of the post-hibernation larva by Buckler (1901).

22.6.81. The first ova were laid this evening on the netting, with a total of 44 between now and the 29th, when the moth died. They were a shiny, pale, translucent green, becoming reticulated and darker after two days. Fine ribbing is apparent. It is 0.6mm in diameter and 0.3mm high. Of the number laid, the first 25 hatched, the rest soon crumpling – presumably being infertile in an old moth.

2.7.81. The first larvae began hatching during the day. They were pale, translucent and glossy, with a dark dorsal line, broad on the first segment and tapering away $\frac{2}{3}$ along length of body. They fed on fresh rather than stale oak leaves and ignored birch leaves.

8.7.81. The hatch was completed by this date, but the earliest larvae were now ready for their second instar. They began by eating fresh leaves, skeletonising them and continuing to feed on these same leaves even though they had become overtly mouldy. Indeed, the older the larvae became, the more they preferred withered leaves.

4.9.81. The leading larvae gave the appearance of being full grown, the largest ones being 15.0mm and the smallest 12.0mm, and were now eating only very withered or dead leaves.

1.11.81. The larvae increased only a further 1.0mm in size to a maximum of 16.0mm, and were now very sluggish.

On the advice of Mr. G. Haggett, I had dried some green oak leaves, which I then put in a ventilated plastic box with other dead leaves on coarse tissue paper, and placed them in the garage for overwintering.

Over the next week or two, the larvae settled in hibernating positions on the tissue and there they stayed without further movement until early April, when some wandering was observed. Assuming that further eating might take place, I added more dried oak leaves, plus a few holm oak leaves picked off a tree, and some birch catkins.

27.4.82. There was little evidence of feeding. One holm oak leaf was nibbled and there was some sporadic chewing of the old leaves. The catkins were not touched.

The first cocoon noted was in a dead oak leaf, but the rest pupated in flimsy but adequate cocoons in folds of the tissue paper, incorporating any fragments of leaf in the vicinity. Eleven larvae formed cocoons.

13.5.82. All the remaining larvae had pupated by this date. The pupa is about 12.0mm long, narrowish and not very glossy.

7.6.82. The first moth emerged today, and the remaining nine over the next few days. They sat quietly in the plastic box, choosing the darkest place.

Description of mature larva

The larva at or approaching full growth is a warm, pale brown in ground colour, with a dark dorsal line. There is a lateral line running on each segment, running ventrally from the dorsum. This line is intersected at the spiracular level by a vague line running disto-dorsally, so that when viewed from the side, the larva has a latticed appearance and when viewed dorsally the lines give the appearance of a row of diamonds. Each segment has four black spots in two pairs, the two anterior ones are close to the midline (when viewed dorsally), and the two distal ones are wider apart. The spiracles are black, the head is brown with a pronounced taper of the body to the head. Length is just over 16.0mm. The foregoing description was made on 10.10.1981.

Feral habits

South (1908) mentions that the moth 'frequents the more open parts of woods, and in the daytime may be induced to show itself by tapping the lower branches of trees or brushing the bushes or undergrowth as we pass along'. The truth of this statement has certainly been borne out by my personal experience. It sits for preference on the lower branches of oak trees, and when disturbed quickly flies off to another hiding place, usually in the woodland undergrowth.

I have not looked for the larva in the wild, but it is interesting to read the careful researches into the life history of its relative *Trisateles emortualis* Denis & Schiff. by Baker (1969), bearing in mind the way *strigilata* also skeletonises withered leaves. It would probably be profitable to examine dead oak branches with attached leaves for evidence of skeletonisation of the leaves in old mature oak woodland.

This moth has another relative which is well known for existing in exceedingly small numbers, that is *Colobochyla salicalis* Denis & Schiff., which is rarely encountered until optimum conditions occur. I wonder whether these conditions are provided by a period of forestry activity, in which branches with leaves on are left lying about. Likewise, I have more than once stood in one of the Chiltern localities for *T. emortualis* and speculated on whether the period when the moth was common coincided with clearance and felling in the area.

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I should like to thank Mr. G. Haggett for advice on overwintering the larvae and also Mrs. Lorraine Culpin for patiently typing the manuscript.

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The Willoughby Gardner Library: A Collection of Early Printed Books on Natural History by J. R. Kenyon. 54pp., including frontispiece and 9 other illusts. Stiff, decorated cover. National Museum of Wales, Cardiff, 1982. £4.50 (£4.80 by post).

This is a catalogue of the 288 books forming the collection of the late Willoughby Gardner (1860-1953), which was acquired by the Library of the National Museum of Wales in 1953. The items are arranged alphabetically under authors' names, and with each entry there is a concise collation. Most of the collection consists of early printed books on the natural sciences ranging from the 15th-18th centuries, a fair number being of entomological interest.

Among the more notable books on entomology are those by Aldrovandi, Albin, Drury, Moses Harris, John Jonston, L'Admiral, Lewin, Linnaeus, Matthew Martin, Merian, Merrett, Moffet, Petiver (including a copy of the exceedingly rare *Papilionum Britanniae icones*, 1717), Ray, Reaumur, Roesel von Rosenhof, Schaeffer, Sepp, Swammerdam and Wilkes (including only the second known copy of *Directions for making a Collection*, 1742). The catalogue is well printed on a good quality paper, and tastefully got up. — J.M.C.-H.

BUTTERFLIES IN CENTRAL SPAIN IN MAY 1982, INCLUDING A RECORD OF NORTHWARD MIGRATION

By J. F. BURTON* & D. F. OWEN**

Introduction

From 10th to 24th May, 1982 inclusive we visited the neighbourhood of the Sierra de Guadarrama, near Madrid, and the Sierra de Gredos further west; areas whose butterfly fauna has not received a great deal of attention. The main purpose of our expedition was to make sound recordings in stereo of birds and other wildlife for the B.B.C. Natural History Unit as well as three radio programmes about the wildlife of these areas which were broadcast on B.B.C's Radio 4 between 25th March and 8th April, 1983. We were accompanied by D. J. Tombs, an experienced B.B.C. recording engineer and keen amateur ornithologist. In spite of these preoccupations we paid as much attention as possible to the butterflies and featured them in the programmes we made.

We travelled to Spain with the car ferry from Plymouth to Santander, docking at 1000 hrs. local time on 10th May. During the drive from Santander via Burgos to our headquarters for the next week at the mountain resort of Miraflores de la Sierra, in the Sierra de Guadarrama, we made some casual observations at points along route E25 where we stopped for refreshment. These are included, for convenience, in the species list below together with our notes made in the Sierra de Guadarrama and Sierra de Gredos mountain regions where we spent most time.

As mentioned above, we spent the first six days, from 10th to 15th May, in the Sierra de Guadarrama. We concentrated on a mountainside wood consisting chiefly of Pyrenean Oaks: *Quercus pyrenaica* Willd., at an altitude of around 1,300 m. We also made a few excursions elsewhere: to Guadalix on 11th May; Puerto de Canencia (1,600m.), Canencia and Lozoyuela on 13th; and during our drive from Miraflores to the Gredos mountains on 15th we explored the mountain slopes above Rascafria.

From 16th to 24th May inclusive we explored an area of approximately 600 square kilometres between Arenas de San Pedro and Madrigal de la Vera in the southern foothills of the Sierra de Gredos and Oropesa and Calzada de Oropesa on the E4 Naval-moral de la Mata to Talavera de la Reina road to the south. A little time, however, was spent on the road leading up to the mountain pass of Puerto del Pico (1,352 m.) on 23rd May, where we

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observed the migration of butterflies described below, and also in the northern part of the Gredos Mountains around Navarredonda de la Sierra on 23rd and 24th May where we had stayed the night in the Parador — a splendid old hunting lodge.

From the bare granite tops of the Gredos Mountains the habitat graded through extensive pinewoods to mixed woodland and cultivated land on their lower slopes; to the south the land undulated fairly gently to and beyond the River Tietar through the Sierra del Agulla before flattening out to a dry, dusty plain which extended all the way to the next ridge of high ground on which Oropesa and its castle stands. Near Oropesa, there are large, semi-arid cultivated fields, but most of the country between the town and the River Tietar consists of sandy, heavily grazed grassland with a fairly extensive, park-like cover of Cork and Holly Oaks: *Quercus suber* L. and *Q. coccifera* L. here and there.

The weather throughout our sojourn in central Spain was mainly fine and sunny, although thundery showers occurred occasionally on the high mountain tops where quite a lot of snow still lay. It was distinctly cooler in the Sierra de Guadarrama, especially in the early morning, than in the Sierra de Gredos. The latter range is, of course, farther south and west, and we were there later in the month. It was usually very warm or hot in the valleys of the Sierra de Guadarrama, and especially hot in the foothills and the plain to the south of the Sierra de Gredos, except when an occasional breeze blew from the mountains.

Migration through the Sierra de Gredos

On 23rd May, a hot sunny day, we left Arenas de San Pedro and drove northwards along the steep road which zig-zags up to the mountain pass of Puerto del Pico (1,352 m.). We noted many butterflies on the way to the top, including several migratory species (eg., Large White: *Pieris brassicae* L., Small White: *Artogeia rapae* L., Bath White: *Pontia daplidice* L., Clouded Yellow: *Colias crocea* Geoff., Long-tailed Blue: *Lampides boeticus* L., Red Admiral: *Vanessa atalanta* L. and Painted Lady: *Cynthia cardui* L.), but were not conscious of a migratory movement in progress until after we had reached the pass and had settled down towards noon in the narrow valley between the mountain peaks to spend a couple of hours making sound recordings of the Ortolan Buntings: *Emberiza hortulana* L. and other birds present there. While we were doing so we became aware that most of the butterflies we saw were flying northwards through the pass. We decided to make a count, starting at 1300 hrs., of the numbers per hour of each species passing between us on a 50 m. front. This gave the following figures:—

	Total/hour	Height above ground
<i>Artogeia rapae</i> L.	360	1 - 3 metres

Colias crocea Geoff.

250

0 - 1 metre

Combined total: 610

These were the only species which crossed out line of vision during the sample count, but during the three hours we spent in the pass other species noted flying north were Large Whites: *P. brassicae* L. (a few), Green-veined White: *A. napi* L. (several), Berger's Clouded Yellow: *C. australis* Verity (a few), Pale Clouded Yellow: *C. hyale* (a few), *V. atalanta* L. (a few), *C. cardui* L. (a few) and *L. boeticus* L. (several).

All the butterflies were flying purposefully against a fresh north wind, mostly at low level. The majority of those in our sector flew straight on through a thick plantation of small conifers, dodging between the trees. Some of the female *crocea* were of the form *helice*. We recorded a short eye-witness description of the migration by D.F.O. which was broadcast in B.B.C. Radio 4's "The Living World" on 30th May, 1982.

When we finished our sound recording work and continued north through the Sierra de Gredos on the Avila road we were surrounded by butterflies of the species already mentioned flying in the same direction. The movement was still in progress at 1400 hrs. when we stopped for lunch at Vta. del Obispo, some 5 km. further north, but appeared to have stopped when we emerged from the inn soon after 1500 hrs.

Systematic List of Species Recorded

Swallowtail: *Papilio machaon hispanicus* Eller. Sierra de Guadarrama: one, Miraflores town, 12.v. Sierra de Gredos: one, Arenas de San Pedro, 15.v.; a full grown larva on Fennel *Foeniculum vulgare* Miller near Ramacastanes, near Arenas de San Pedro, 16.v.

According to Eitschberger and Steiniger (1973b), supported by de Freina (1975), the Swallowtail is sporadic and solitary in its distribution in Spain with the exception of the mountain ranges of the Sierra de Guadarrama, Sierra de Gredos and the Sierra de Estrêla. Manley and Allcard (1970) state that it is to be found in all parts of the Peninsula, although it has never been their experience to find it in abundance.

Scarce Swallowtail: *Ipichlides podalirius feisthamelii* Duponchel. Sierra de Guadarrama: one, Miraflores, 12.v. Sierra de Gredos: one, Oropesa, 19.v.

Like *machaon*, this species is also considered by Eitschberger and Steiniger (1973b), who have searched for it in many localities, to be rather solitary and sporadic in its distribution, while de Freina (1975) remarks that it seems faithful to its preferred haunts and that he has only found it in elevated places.

Spanish Festoon: *Zerynthia rumina* L. Sierra de Guadarrama: common around Guadalix and Miraflores, especially in open clearings of Pyrenean Oak woods. Here 2nd instar larvae were found

singly, or in twos and threes on birthwort *Aristolochia pistolochia* L., 12.v. Sierra de Gredos: locally plentiful in the foothills around Arenas de San Pedro and also on the Cerro del Agulla near the River Tiétar between Candeleda and Corchuela, 17-22.v.

Black-veined White: *Aporia crataegi* L. Sierra de Gredos: several, Cerro del Agulla, near River Tiétar, 21.v.; two flying on flowery bank below the Canal de Rosarita, near Madrigal de la Vera, 21.v. (one collected by D.F.O.).

Presumably those we saw belong to the race *rutae* Bryk: de Freina (1975) recorded it in the Sierra de Guadarrama at El Escorial in June, 1973.

Large White: *Pieris brassicae* L. Sierra de Guadarrama: frequent around Miraflores, 11-14.v.; Sierra de Gredos: fairly common 17-22.v.; a few seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Eitschberger (1970) and Eitschberger and Steiniger (1973b) found the apparent scarcity of this species puzzling during collecting trips to Spain in 1969 and 1972.

Small White: *Artogeia rapae* L. Sierra de Guadarrama: frequent around Guadalix, Miraflores, Puerto de Canencia and above Rascafria, 11-15.v. Sierra de Gredos: common, 16-23.v., in foothills between Madrigal de la Vera and Arenas de San Pedro; 360 per hour seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Green-veined White: *A. napi* L. Sierra de Guadarrama: frequent around Miraflores, 11-14.v., including glades in pinewoods at around 1,500 m.; also at ca. 1,400 m. on mountain slopes above Rascafria on 15.v. Sierra de Gredos: frequent in foothills between Madrigal de la Vera and Arenas de San Pedro, 16-23.v.; a few seen migrating north over the Puerto del Pico, 23.v. (*q.v.*).

Bath White: *Pontia daplidice* L. Sierra de Guadarrama: one, Guadalix, 11.v.; apparently frequent around Miraflores 11-14.v. Sierra de Gredos: apparently common in foothills between Madrigal de la Vera and Arenas de San Pedro, and southwards on the Cerro del Agulla and the Sierra del Agulla, 17-23.v.; as already mentioned, this species was present in small numbers with other migratory species in the steep valley leading up to the Puerto del Pico on 23.v., but we did not obtain any clear evidence of its involvement in the migration we observed through that pass at midday on that date. As we only caught and examined a sample of the butterflies we saw and found it difficult to separate this species from *Euchloe simplonia* Freyer by sight when on the wing, we were unable to establish a precise idea of the relative abundance of the two species.

Dappled White: *Euchloe simplonia* Freyer. Apparently common on open ground in most of the places we visited in the Sierra de Guadarrama and Sierra de Gredos regions, including Miraflores, Poyales de Hoyo, Candeleda, Arenas de San Pedro, below the Puerto del Pico, Madrigal de la Vera, Carro del Agulla and Sierra del Agulla.

Orange Tip: *Anthocharis cardamines* L. Road from Santander to Burgos 10.v.: one male at Puerto de Carrales (1,020 m.), common at Pesquera de Ebro along the banks of the Ebro where it flows through a deep gorge; Sierra de Guadarrama: a few, Guadalix, 11.v., common in the Pyrenean Oak wood near Miraflores, 11-14.v., and also on the mountain slopes above Rascafria, 15.v. Not met with in the Sierra de Gredos or its environs.

Morocco Orange Tip: *A. belia euphenoides* Staud. Sierra de Guadarrama: common around Miraflores, 11-14.v., especially in the wood of Pyrenean Oaks. Frequent on the mountain slopes above Rascafria, 15.v. Sierra de Gredos: common locally in the foothills between Madrigal de la Vera and Arenas de San Pedro, and in the steep valley leading up to the Puerto del Pico.

Clouded Yellow: *Colias crocea* Geoff. Sierra de Guadarrama: frequent around Miraflores, 11-14.v.; two near Guadalix, 11.v. Sierra de Gredos: common in the southern foothills and on mountainsides, and here and there in flowery fields in the plain to the south, 17-22.v.; 250 per hour migrating north over the Puerto del Pico, 23.v. (*q.v.*). A small proportion of the females were of the variety *helice*.

Pale Clouded Yellow: *C. hyale* L. Road from Santander to Burgos, 10.v.: one. Sierra de Guadarrama: none seen; Sierra de Gredos: at least one and a few other possibles migrating north over the Puerto del Pico, 23.v. (*q.v.*). There are apparently few authenticated records of this species in Spain and its status is uncertain (Manley and Allcard 1970). Eitschberger and Steiniger (1973b) and de Freina (1975) did not encounter any during their visits to the Guadarrama and Gredos ranges.

Berger's Clouded Yellow: *C. australis* Verity. Sierra de Gredos: several identified, including a few migrating north with *crocea* over the Puerto del Pico, 23.v.

Brimstone: *Gonepteryx rhamni* L. Road from Santander to Burgos, 10.v.: several at Puerto de Carrales (1,020 m.), common at Pesquera de Ebro; Sierra de Guadarrama: frequent in pinewoods at ca. 1,500 m. between Miraflores and Canencia, 13.v., also at ca. 1,400 m. on mountain slopes above Rascafria on 15.v. Sierra de Gredos: frequent in the foothills between Madrigal de la Vera and Arenas de San Pedro, 16-23.v.

Cleopatra: *G. cleopatra europaea* Verity. Pesquera de Ebro, north of Burgos: common, 10.v. Not seen elsewhere.

Wood White: *Leptidea sinapis* L. Sierra de Guadarrama: a few noted in woods dominated by Pyrenean Oak *Q. pyrenaica*, near Miraflores, 11-14.v. Sierra de Gredos: a few encountered in the foothills between Poyales de Hoyo and Candeleda, 17-22.v.; Madrigal de la Vera: one collected 18.v.; several on shady banks of the Canal de Rosarita, 21.v.

(To be continued)

Notes and Observations

TREASURER'S NOTICE. — I am pleased to announce that the subscription to 'The Record' for 1984 (Volume 96) will remain at £10.00 (U.K.) and £11.50 (Overseas). — P. J. JOHNSON.

BOOK TALK SIX. — That impressive, finely illustrated work *The Lepidoptera of the British Islands* by Charles Golding Barrett (1836-1904), is still regarded as the most authoritative account of the subject despite its age. Published from 1893-1907 in 11 volumes 8vo. large paper, it contains 504 hand coloured plates, the quality of which can vary considerably in different sets. In the earlier or subscribers' copies the colouring is superior, whereas in those sets which were coloured up later — the work was still obtainable new from Lovell Reeve the publisher until shortly after the end of World War II — the illustrations tend generally to be relatively poor. In my own copy which belonged to E. A. Atmore, who collaborated with the author, the illustrations are among the finest I have seen in this work and contrast favourably with those of the original pattern plates in the Department of Entomology, British Museum (Natural History), with which they have been compared by kind permission of the Librarian.

The work was evidently published originally in parts with printed wrappers, but with what frequency these parts were issued is not known. I have only seen one example in parts, and that is very incomplete. It is in the library of Mr. D. S. Burrows and collates as follows: Part 35, 1896, pp.1-32, pls. 137-140; Part 38, 1897, pp. 97-128, pls. 149-152; Part 39, 1897, pp. 129-160, pls. 153-156; Part 42, 1897, pp. 225-256, pls. 165-168; Part 43, 1897, pp. 257-288, pls. 169-172; with each part printed on the wrapper "Price 3s Plain, 5s Coloured". I have not seen a copy with the plates uncoloured, though there is of course the ordinary 8vo. unillustrated edition which is not rare.

After the author's death, Richard South undertook responsibility for seeing the final portion of the MS. through the press and so enabled volumes 10 and 11 to be published. Subsequently, in 1907, there was published separately, both in large paper and in ordinary 8vo., a most useful pamphlet of 20 pages (including title page and verso), listing alphabetically every species (with synonyms) mentioned in the work, together with the references to plate, volume and page numbers, and entitled *Alphabetical List of Species contained in C. G. Barrett's Lepidoptera of the British Islands forming a Supplementary Index to that Work*. The remaining stock of this index was acquired by Mr. L. Christie, 129 Franciscan Road, Tooting, London SW17 8DZ, from whom copies are still obtainable at the time of writing. — J. M. CHALMERS-HUNT.

COLIAS CROCEA IN 1983. — We have received so many reports of sightings of this butterfly this year that it would be impossible to publish them all. They range from Cornwall to Kent and Essex, north to Westmorland (vc.69), and to Breconshire in Wales. We hope in due course to produce a summary of its occurrence in the 1983 Migration Report. — J.M.C.-H.

BUTTERFLIES AT M. V. LIGHT AND AN AGRIUS CONVULVULI. — On 17 August 1983 in the Burrén, a Grayling entered the trap and refused to leave. The next night a Wall was attracted and on 19 August it was a Speckled Wood. On the night of 20, I operated at Kylemore, Connemara, when the next morning revealed a Peacock sharing an egg carton with a worn *Convolvulus* Hawk. All four nights were mild and muggy. R. G. CHATELAIN, 65 East Drive, Orpington, Kent.

A SECOND NORFOLK RECORD OF *DORCATOMA SERRA* PANZ. (COL.: ANOBIIDAE); AND A CORRECTION. — On 22nd June, 1981, I swept a *Dorcatoma* from tangled mixed foliage in a row of straggly trees in a lane at Catfield Fen, E. Norfolk, which to my surprise proved to be a fine fresh male of *D. serra*. There is one previous record known to me for the county, from Swainsthorpe near Norwich by the late F. D. Buck; I do not have the date, but it would be about 40 years ago. The species is very local and usually rare but, like any of the genus, can sometimes be found in plenty when its breeding-place (various tree fungi) is discovered. There were some rather decrepit alders where the Catfield specimen was taken, one of which no doubt was the source.

In a recent note on *Dorcatoma* spp. in Kent (*antea* 115-6) I mentioned that there appeared to be no Kent record of *D. dresdensis* Hbst. Since then Mr. E. G. Philp has kindly informed me of a record of Capt. J. A. Stephens having exhibited specimens of *dresdensis* from Cobham Park in 1944, reported in *Proc. S. L. ent. nat. Hist. Soc.*, for 1944-5, p.19. This is of interest in offering a conceivable explanation of Fowler's VCH record of *D. flavicornis* "in fungi on trees" at the same locality by J. J. Walker, on which I commented in the above note. If we can believe that the species found by Walker was actually *dresdensis* — a bare possibility — long before it was known to be British, Fowler's puzzling reference to tree fungi is accounted for.

An earlier Kent record of *D. dresdensis* has come to light, not known to either Mr. Philp or myself at the time of writing the above. A visit to the BMBH has revealed three specimens with data 'East Malling, 10.v.42, A. M. Massee, bred ex *Polyporus*'. Dr. Massee must surely have published this discovery, but I have seen no note of it. — A. A. ALLEN.

THE SMALL BLUE: *CUPIDO MINIMUS* FUESS. IN CUMBRIA. — On July 8 1983 I discovered a colony of the Small Blue in Cumbria. In a careful three hour search in ideal weather conditions, I located

seven (and possibly eleven) separate individuals flying with Small Heath, Common Blue, and Meadow Browns. The food plant (*Anthyllis vulneraria*) was locally abundant. This being at a rather late date in what was an already late season, some specimens were a little worn but at least one male was freshly emerged. Whilst localised, individuals were prepared to range for up to 50 metres and were difficult to follow for long periods, for although relatively slow and low flying, they were readily lost against the background in the bright conditions pertaining. To my knowledge this is the first reported record for Cumbria within the last decade where the species was thought to be possibly extinct. It is also perhaps the first record for several years for North West England as a whole. The locality which is a warm sunny bank and flat below, is in a previously unrecorded 10 km square for this species, (*Distribution Maps of the Butterflies for the British Isles*, Ed. J. Heath, 1982), but for obvious reasons the site is not disclosed. Several specimens were photographed, but none were taken. I hope to further monitor the progress of this colony in future years and it is hoped that it will be unaffected by any form of commercial development or by collectors. — M. J. Y. FOLEY, 87 Ribchester Road, Clayton-le-Dale, Blackburn, Lancs.

ON THE OCCURRENCE OF *DANAUS CHRYSIPPUS* L. IN TUNISIA IN 1983. — Further to the remarks on this butterfly by J. F. Burton (*Ent. Rec.*, 94: 208), I may add that I too had the wonderful experience of seeing this butterfly on the move in Tunisia. On July 10th 1983 while on a birdwatching expedition with a colleague Dr. Charles Galea Bonavia, a number of specimens of *D. chrysippus* were noted. They were flying in a NNW'ly direction across the vast glasswort plain adjacent to the west sector of Kairouan, during a shade temperature which increased to 40°C by noon while the wind remained relatively calm throughout the day.

The first specimen was observed at 0725 hrs. and a total of 13 butterflies was seen up till 0910 hrs. No more were accounted for until later on in the afternoon of that day, when at 1715 hrs. a further four were sighted sailing over the locality in the same general direction. Three days later (13/7) we travelled to El Kef, a bus journey lasting some 3½ hours across almost 200km of countryside. During a short stop along the route in an area known as La Kesra (approx. 80km from Kairouan), we spotted yet another specimen: further evidence that the species was heading towards the Maghreb coast and possibly crossing the Mediterranean to southern European localities.

On arrival at El Kef we sought accommodation at the local Youth Hostel, afterwards strolling around the grounds where we caught sight of another *chrysippus* at 1625 hrs. (13/7). The writer is indebted to Mr. Anthony Valletta, F.R.E.S., for his valuable advice. — L. F. CASSAR, Villino Fralimar, Nazju Ellul Road, Msida, Malta.

HYDRELIA SYLVATA D. & S: TESTACEATA DON. (LEP.: GEOMETRIDAE) — LARVAL FOODPLANT IN MID-KENT. — It has long been thought that the larvae of this moth fed here upon sweet chestnut (*Castanea sativa*). — the moths were frequently observed resting on these trees, but Chalmers-Hunt in his 'Lepidoptera of Kent' states for this species — foodplant unknown. On August 16th, 1983, I visited a sweet chestnut plantation last coppiced several years ago, near Barming, and by beating the lowest branches which were just within reach secured half a dozen of the quite distinctive larvae. A month earlier, on July 18th, one m/v light within half an hour had attracted about one hundred *H. testaceata*, the vast majority of which were males, and almost all specimens were melanics approaching, or of the form, *goodwini* Banks. Undoubtedly, in these woodlands, sweet chestnut is not only the major larval foodplant, but probably the only one. — B. K. WEST, 36 Briar Road, Bexley, Kent.

Current Literature

Tabellen En Verspreidingsatlas Van De Nederlandse Microlepidoptera.

A4 format, limp. **PART I: Pyralidae** by J. H. Kuchlein, F. Leffef & R. H. Kleinpaste. 77pp: 149 figs: 99 maps. Pub. 1980 (now reprinting). **PART II: Pyralidae, Pterophoridae** by J. H. Kuchlein & C. Gielis. 86pp; 119 figs; 113 maps. Pub. 1982, price 21.75 Dutch Florins. Obtainable from Agricultural University, Centraal Magazijn, De Dreyen 4, Wageningen, Netherlands.

The title of this series of publications translates as "Keys and distribution atlas of the Dutch microlepidoptera". Part I covers the sub-families Galleriinae, Crambinae and Phycitinae whilst Part II covers the Pyralinae, Pyraustinae and Pterophoridae. Between the two parts, 211 species are considered.

The works are essentially illustrated keys together with distribution maps (for the Netherlands) and brief notes on the biology and occurrence of each species. The illustrations comprise diagrams of wing patterns, genitalia and other structures for selected species very much in the style of the text figures in "British Pyralid and Plume Moths" (1954) by B. P. Beirne, but in the opinion of the reviewer these illustrations are far superior to those in Beirne. A considerable amount of information is available to the patient reader with no knowledge of Dutch, and with a dictionary it is (just!) possible to creep through the keys.

The reviewer was unable to translate enough of the text to comment on its accuracy, but the quality of the figures makes them a worthwhile purchase for the serious student of the Pyrales. It is a great pity that the publishers did not follow the example of the "Fauna Entomologica Scandinavica" series in choos-

ing English as the text language, for had they done so there is no doubt that they would have enjoyed substantial European sales. — PAUL SOKOLOFF.

The Study of Stoneflies, Mayflies and Caddis Flies by T. T. Macan. 44pp. and 17 text figs. Stiff wrapper. The Amateur Entomologist, volume 17. 1982. £2.70 inclusive. Obtainable from: AES Publications, 4 Steep Close, Green Street Green, Orpington, Kent BR6 6DS.

Here we have another of those inexpensive, handy and admirably practical monographs for which the AES is so renowned, attractively written by an authority of high repute. A brief general introduction on collection, equipment, methods and identification is followed by accounts of the Plecoptera (about 9pp.), with habitats of the larvae and adult, life history, food of larvae; then the Ephemeroptera (about 15pp.), with structure and development, food, life history, habitat of the various species, ecological factors, the adults, mating and oviposition; and finally, the Trichoptera (about 14pp.), with literature, description, the adult, eggs, larvae, pupa, classification, life histories, general distribution, ecology, migration, food, trichoptera and man. The enlarged (for the most part) illustrations add considerable interest, and a list of 34 bibliographical references completes the booklet. — J.M.C.-H.

Annales Historico-Naturales Musei Nationalis Hungarici (abbreviated to *Ann. H-N.*), and **Acta Zoologica Academiae Scientiarum Hungarici** (abbreviated to *Acta Zool.*).

I have received from Dr. A. M. Vojnits a series of separates of his papers on mainly oriental Eupitheciid and one or two other Geometrid species. These papers are in the English language and are illustrated by clear line-drawings of genitalia dissections, and include several new species and sub-species. I list below the titles and references of these papers, which appear in either one or other of the above periodicals.

(1) Archieariinae, Rhodometrinae, Geometrinae II, Sterrhinae II and Ennominae III (Lepidoptera, Geometridae) from Mongolia. *Ann. H-N.* 69: 165-175, 1977. (2) New *Eupithecia* Species and Sub-species from Asia and North Africa. *Acta Zool.* XXIII, 1-2: 227-236, 1977. (3) Geometridae Eupitheciinae III (Lepidoptera). *Acta Zool.* XXIII, 3-4: 461-485 1977. (4) Larentiinae (Lepidoptera) Geometridae) from Mongolia: *Ann. H-N.* 70: 191-195, 1978. (5) Eupithecini from Korea and China. *Acta Zool.* XXIV, 1-2: 225-252. (6) Investigations in the "*Eupithecia scalptata-syriata*" Group (Lepidoptera, Geometridae). *Acta Zool.* XXIV, 3-4: 431-438, 1978. (7) Data to the *Eupithecia* Fauna of China (Lepidoptera, Geometridae) *Acta Zool.* XXVI, 4: 433-449, 1980. (8) Data to the *Eupithecia* Fauna of Nepal I. (Lepidoptera, Geometridae) *Acta Zool.* XXVII, 1-2: 217-238, 1981. (9) Data to the *Eupithecia* Fauna of Asia (Lepidoptera, Geometridae) *Ann. H-N.* 73: 221-237, 1981.

- (10) On Some Chinese *Eupithecia* Material Collected by H. Höne (Lepidoptera, Geometridae). *Acta Zool.* XXVII, 3-4: 407-430, 1981. (11) A Revision of the "*Eupithecia innotata* Group" I (Lepidoptera) Geometridae). *Ann. H-N.* 74: 217-239, 1982. (12) New *Eupithecia* Species from the Asiatic Regions of the Soviet Union and Iran. *Acta Zool.* XXVIII, 3-4: 403-420, 1982.

The quoted periodicals are obtainable from: Blackwell's Periodicals, Oxenford House, Magdalen Street Oxford. Collet's Subscription Import Department, Denington Estate, Wellingborough, Northants. Robert Maxwell and Co. Ltd., 4-5 Fitzroy Square, London W. — S.N.A.J.

Butterflies of the Yemen Arab Republic by Torben B. Larsen, with a **Review of Species in the *Charaxes viola* Group from Arabia and East Africa** by Dr. A. H. B. Rydon. Three coloured and two other plates; paper wrappers. Royal Danish Academy of Sciences and Letters. Obtainable from: Munksgaard Export and Subscription Service, 35 Norre Sogade, DK 1370 Copenhagen K, Denmark. Kronen 120,00.

In this survey of the butterflies of the Yemen Arab Republic the author has followed a similar scheme to that used in his well known book on The Butterflies Of Lebanon. An introduction outlining the very restricted history of butterfly research in Yemen is followed by a comprehensive bio-geographic description of the country and brief comments on the author's own experiences there in May 1980. In the systematic part Torben Larsen draws on the meagre published information and some unpublished data, as well as his own records. 106 butterfly species are listed in this section but a further 13 are included in a postscript, most of these additions being a result of a further visit to Yemen by the author. Some of the species resulting from these two visits were not only new to the Arabian peninsula but three of them were new to science. In my opinion the outstanding feature of all of Larsen's writing, however, is in the interesting personal observations he includes of habits, foodplants, and general ecology. This paper is no exception.

In the Appendix, Dr. A. H. B. Rydon has contributed an interesting paper on aspects of the taxonomy of the *Charaxes viola* group. This includes descriptions of three new species, one of them *Charaxes bernstorffi*, collected in the Yemen for the first time by him in May 1980 and the only member of this group to have been recorded from Arabia. The other two new species described are both from south west Ethiopia *Charaxes smilesi*, previously lumped with *Charaxes daria* Van someren and Jackson; and *Charaxes larseni*, also a member of the *viola* group. Other members of which are discussed in this paper. Para. 7.

This joint publication concludes with five plates, (three in colour) of Yemen butterflies and their habitats; and illustrations of some of the closely related *Charaxes viola* group — including the three new species. — C. J. LUCKENS.

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CONTENTS

- Gronops inaequalis* Boheman (Col.: Curculionidae): a Weevil New to Britain. L. CLEMONS, 213. *Thaumetopoea processionea* L. (Oak Processionary Moth): the Imago Recorded in Britain. A. P. FOSTER, 216. Records of Coleophoridae in North Wales. H. N. MICHAELIS, 217. *Tachydromia terricola* Zett. (Dip: Empididae) New to Britain. A. A. ALLEN, 223. Recording Lepidoptera in the Cotswolds during 1982. M. McCREA, 225. *Apium nodiflorum*: a Previously Unrecognised Foodplant of *De-pressaria ultimella* Stainton. R. J. HECKFORD, 229. A Modern Review of the Demise of *Aporia crataegi* L.: the Black-veined White. C. PRATT, 232. Some Notes on *Polypogon strigilata* L. B. ELLIOTT, 238. Butterflies in Central Spain in May 1982, including a Record of Northward Migration. J. F. BURTON & D. F. OWEN, 242.
- NOTES AND OBSERVATIONS, 215, 222, 224, 231, 237, 247-250.
- CURRENT LITERATURE, 241, 250-252.
-

TO OUR CONTRIBUTORS

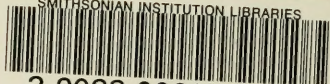
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